A

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TREATISE

UPON THE

CULTURE

OF

PEACH TREES.

TRANSLATED FROM THE FRENCH.

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To the READER.

THE number of books already written upon the ſubject of managing fruit trees, ſhould ſeem to render any further publication of the like kind unneceſſary. But having proved by experiment the ſuperior excellence of the following Treatiſe, I have been induced to offer this Tranſlation of it to the Public, in hopes of making the cultivation of Peach Trees better underſtood, and the art of pruning them practiſed upon more rational and more natural principles than it has hitherto been.

I ſhall make no apology for the Tranſlation, which abounds with repetitions, and many other defects, impoſſible to be avoided upon a ſubject of this kind. All I have aimed at has been to make it as eaſy and uſeful as poſſible to the practical Gardener; and though a great deal of it may not appear new to him, yet I apprehend he will find the moſt material part of the practice ſo clearly and ſufficiently treated, as to enable him to pick out much uſeful inſtruction and knowledge.

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OF

OF THE CULTURE OF PEACH TREES.

CHAP. I.

Of Peach Trees in general.

THE Peach is eſteemed one of the moſt excellent fruits of Europe; but in our climate, the cultivating it with ſucceſs requires more care, and conſequently more knowledge than any other ſort. It is owing only to the great number of theſe trees ſo univerſally raiſed, that in a favorable year we have ſuch abundance of this fruit in Paris and its environs; for by the preſent unſkilful method of treating them, their crops are ſo deficient that an hundred trees do not yield ſo much fruit as might be produced by twenty under a more judicious management; and this of courſe makes the profit of them more uncertain than that of any other fruit-tree whatever. On the other hand it muſt be acknowledged that they cover a wall more agreeably, bear ſooner, and excel both in beauty and flavour moſt other ſorts of fruit. Theſe are ſuch advantages that no difficulty nor expence ſhould prevent thoſe who have it in their power from indulging themſelves in ſo pleaſing an amuſement. At the ſame time, thoſe who cultivate them for profit, ſhould give up the miſtaken notion of their being ſuperior to all other fruit in this particular. It is ſaid that Mr. Girardot, a muſketeer of long ſtanding in the king's ſervice, cleared annually 30,000 livres * from a ſmall ſpot of land which he had at Bagnolet; and great numbers have been much miſled by this inſtance: but we muſt diſtinguiſh between thoſe times and the preſent. Formerly the culture of this fruit was known but to few people: at preſent all the world pretend to it; and the plantations are ſo greatly increaſed that the fruit is become common, and conſequently of leſs value in proportion to ſuch plenty. The village of Montreuil is brought as an example of the great profit ariſing from this fruit, which, it is ſaid, produces nothing but Peaches and ſome kinds of red fruits; and for this ſingle article pays to the king 50,000 § livres per annum:

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* About 1312 *l.* 10 *s.* ſtirling.

§ About 2187 *l.* 10 *s.* ſtirling.

to this muſt be added the rent of the land, which commonly lets from 200 † to 250, and even 300 livres per acre ‡; and hence every one concludes that the culture of Peaches muſt be very beneficial. I do not diſpute this inſtance of Montreuil; but there are many circumſtances to be conſidered. Firſt, the profits of theſe Peaches are divided among four thouſand inhabitants, who are employed ſolely in this work, and are as it were bred to it. Secondly, the ſituation of the place and quality of the ſoil are ſo remarkably adapted to this ſort of tree, that it will form itſelf in five or ſix years, and cover the wall from top to bottom; which is rarely the caſe in other places. Thirdly, the diſpoſition of their trees is different from that in moſt other gardens; the whole ground is divided by walls of twenty and twenty-five feet diſtance from each other, which, by forming ſhelters one behind another, defend the fruit from the noxious winds, and preſerve them when they are deſtroyed elſewhere. Fourthly, the pains they take to make the moſt advantage of their fruit is ſcarce to be conceived; they cultivate them with their own hands, they manage them with a degree of knowledge not very common, they guard them night and day, and carry them to market and ſell them with an art peculiar to

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† 8 *l.* 15 *s.*—10 *l.* 8 *s.* 9 *d.*—13 *l.* 2 *s.* 6 *d.* ſtirling.

‡ A French acre exceeds an Engliſh one by nearly ten and half ſquare perch.

them-

themſelves.—How few are there who will beſtow ſo much care and trouble !

I ſpeak now with regard to thoſe who plant for profit, and who aim at nothing but producing a great quantity of fruit. Thoſe who raiſe them only for ſatisfaction and amuſement will be content with ſeeing their trees well trained, and furniſhed with a moderate quantity of the beſt fruit, without envying this great abundance. It is for the latter that I write chiefly; and to do this with propriety and method, I ſhall begin with examining the different ſorts of Peaches, and mark ſuch as are moſt to be preferred.

CHAP. II.

Of the different ſorts of Peaches, and the choice of them.

OPinions are various concerning the different ſorts of Peaches. Mr. De la Quintinie has pretended to diſtinguiſh thirty-two, which he names, excluſive of Nectarines and hard Peaches. Others extend them even to forty or fifty; but theſe (if I am not much miſtaken) often mention the ſame ſort twice; ſo that moſt of them have acquired two or three names. For my own part, I can ſay nothing preciſely on this head, having never taken pains to diſtinguiſh the ſorts accurately. The principal point is to know the beſt; and we loſe very little by being unacquainted with thoſe that are inferior. I confeſs then, that I do not know above fifteen ſorts that are worth attention; and to thoſe we may confine ourſelves, for the reſt are either very indifferent, or very bad. There are ſome which (though good) do not bear well, and are not worth the ſpace they occupy; others are very liable to be injured by the gum, or by ants. In ſhort, there are ſome, which, though they have good qualities, are out of faſhion, their long or crooked ſhape being very unpleaſing. Since then it is not more expenſive to cultivate the beſt than the more indifferent ones, the firſt only deſerve our regard; for a good aſpect is too valuable to be filled with any but the very capital ſorts. If a conſtant ſucceſſion of good Peaches can be obtained from the end of July to the middle of October, nothing more need be deſired; for, after that time, the fruit ripens but very imperfectly. In ſhort, I cannot come into the opinion of many people, who are covetous of every ſort, whether good or bad; eſpecially as it is a fruit that requires great care and pains, and deſerves the beſt ſituation.

The fifteen ſorts which I prefer, form a conſtant ſucceſſion, and are undoubtedly the moſt beautiful, both in colour, ſhape, and ſize, of the higheſt flavour and the beſt bearers, as is univerſally acknowledged. What I ſay in general will ſuffice, without giving a more particular character of them; and if thoſe only are approved of, I ſhould adviſe the following method of diſpoſing them.

If you have room for fifty trees, you will plant

2 Small Mignon
6 Groſs Mignon
2 Red Magdalene
4 Galande
3 Teton de Venus
3 Italian Peaches
3 Early Violet
3 Bourdin
3 Chevreuſe
4 Purple
3 Perſique
4 Admirable
3 Bellegard
3 Royale
2 Nivette
2 Pavies de Pompone

If you have more or leſs room, you will plant in proportion. In a very ſmall garden, or where you have room only for ſix trees, I ſhould adviſe you to chuſe the following:

1 Groſs Mignon
1 Early Violet
1 Galande
1 Purple
1 Admirable
1 Nivette

I give a place to the Violet, which is not eſteemed by many, becauſe it will not acquire its proper flavour nor ſize in every ſoil; but when it is in perfection, I place it before all other Peaches, and have found a great many of my opinion.

I have alſo given the Pavie de Pompone a place in my liſt, though it is not generally liked, and which, as to flavour, I do not myſelf rank among the good Peaches, but I mention it for three reaſons. Firſt, its prodigious ſize and beautiful colour make it the greateſt ornament of the table: Secondly, it comes in eating after all other Peaches are gone: And thirdly, it may be eaten all the year round as a pickle, and ſurpaſſes all others for this purpoſe. It has for this reaſon been in great repute within theſe few years, and is preſerved by ſome in a different manner from the Cucumber.

There is alſo a dwarf Peach, which is raiſed in Orleans, and affords great amuſement to the curious, as a beautiful object, though otherwiſe of no value. It is planted in pots or boxes, where it requires no care but that of watering, and grows about as large in the ſtem as a ſtock Gillyflower; the fruit ſets very well, and it bears ſometimes twenty or twenty-five Peaches, of a middling ſize. The tree is commonly brought to table with the fruit on it, and makes a very ſtriking appearance; but the fruit is inſipid.—It ſeldom ripens well in this climate, but it might poſſibly ſucceed better in a more ſouthern one.

Thoſe who inhabit a warmer country may chuſe ſuch of the ſorts mentioned above, as are moſt adapted to their climate; for inſtance, I do not reckon all the hard Peaches of that value here, that they are in Italy and Provence; nor do I eſteem many ſorts of the late Peaches, which here ripen but very imperfectly, and have very little flavour, though perhaps they might acquire more in theſe warmer countries. It is therefore the buſineſs of the curious to examine what is proper for their own climates: but we ought not to envy any of them in this reſpect; for there is no country where this fruit arrives to ſuch perfection as in this. I have eaten it in all the more ſouthern parts, in the very fartheſt part of Italy, and in Sicily; but the heat of the ſun is ſo violent, that our beſt Peaches do not ſucceed there.

I think it the beſt way to plant the fifteen ſorts, and the hard Peaches I have mentioned, in the ſame order as they ſtand in the liſt. This is a point I have obſerved nobody attends to, but I have found it of great uſe; for as the Peaches which ripen about the ſame time, are planted all together, they will be more eaſily gathered, without going backwards and forwards to ſeek them in different parts of the wall: or, if they require any defence either from men or beaſts, you need only guard one particular part of the wall; and if there ſhould be occaſion in a dry ſeaſon to water thoſe trees which begin to ripen their fruit, you do not make ſo many paths, nor trample the earth all along the walls, (for I ſuppoſe there are croſs walls). In ſhort, as it is as eaſy to plant them in this regular order as otherwiſe, I ſtrongly recommend it as the beſt way.

CHAP. III.

Of the choice of Trees, and the method of raiſing them in the Nurſeries.

THere are ſuch a number of nurſery gardens in the country round Paris, that it is very eaſy to find young trees, when the froſts have not deſtroyed the buds, as it happened in the winters of 1740 and 1742. Vitry, Fontenay aux Roſes, & le Pré St. Gervais, are more particularly ſet apart for this purpoſe; but as there is the greateſt choice at Vitry, they are procured better there than any where elſe, though I have ſometimes had them from Orleans, which have ſucceeded as well. The chief point in moving a tree, is to take care that it does not lay expoſed to the injuries of weather after it is taken out of the ground, that the roots are preſerved freſh by the help of good packing and moſs, and that it has all the other requiſites of a good tree. The place where it is raiſed is of little conſequence, provided there is no remarkable difference between the ſoil it is taken out of, and that into which it is tranſplanted; but this muſt be well attended to.

They are ſold, one year with another, if the buds have grown well, for * 5 ſols the dwarf, 10 ſols the half ſtandard, and 15 ſols the ſtandard;

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* About 2 ½ *d.*—5 ¼ *d.*—7 ¾ *d.* ſtirling.

dard; thoſe who pay dearer are always impoſed upon, relying too much either on the fancied reputation of the nurſery-man, or on the perſon entruſted to buy them; for nothing is more erroneous than to imagine that they are better, or that you are more certain of the ſorts, becauſe they coſt three times as much, which ſome people will aſk for them. In the firſt inſtance, it is only neceſſary to make uſe of your eyes; but in the ſecond, I grant you may be deceived. In this trade, as in all degrees of life, there are people whoſe words are not to be relied on; but here there is this difference, that they can get but very little by deceiving you: however I allow, that, as there are ſome ſorts, ſuch as the Mignon and Galande, the buds of which take with great difficulty, ſome nurſery-men will not bud ſo many as they might, and often ſubſtitute other ſorts that take more freely. But we ought not therefore to look upon them all as cheats: There are in this trade alſo, ſome who are jealous of their reputation, and who are ſenſible that it is their intereſt to be ſo. It is our buſineſs to be acquainted with theſe, for which we muſt depend upon information. The advice I could give upon a matter, the circumſtances of which alter every day, would be but a very uncertain help; and therefore every one muſt purſue ſuch meaſures as he ſhall think beſt. I ſhall only obſerve, that thoſe who are regular in their buſineſs, always have a catalogue of all the plants in their nurſeries, and of thoſe that are budded, entitled thus, " Such a piece of ground bounded in ſuch and ſuch manner, budded with Peaches, contains ſo many rows of ſuch a ſort, and ſo many of ſuch another ;" you examine this catalogue, which there is no reaſon to ſuppoſe fallacious, and following the row, you chuſe what you think proper.

If your nurſery-man has no catalogue, you will of courſe ſuſpect him, and go to ſome other. There is no neceſſity to make uſe of theſe precautions with regard to all the kernelled fruits, which are known by their wood and leaves, ſo that a nurſery-man cannot cheat any one who knows this; but except four or five ſorts of Peaches, *viz.* the Great and Small Mignon, the Magdalene, the Violets, and ſome hard Peaches, all the reſt are ſo much alike, both in wood and leaves, that the nurſery-man himſelf cannot diſtinguiſh them, unleſs he obſerves that regular method above-mentioned.

Upon all theſe accounts then, it is very neceſſary to chuſe them yourſelf, if you are a judge, or that you ſhould be thoroughly ſatisfied of the ſkill and honeſty of the perſon you entruſt to buy them for you; for if you leave it to your gardener, the bribe of a half ſol per tree, which he exacts of the nurſery-men as his right, renders him very tractable to whatever they pleaſe. This is generally the caſe, when you are ill ſerved with trees; for by means of this bribe, they put off all thoſe which are defective.

As to the inhabitants of the provinces, who, either through choice or neceſſity, are obliged to procure their trees from Paris, Orleans, or other parts, I ſhould adviſe them to employ ſome friend, whom they can depend upon, and who will chuſe their trees himſelf, with all the care and precaution that I am now going to ſpeak of, and exactly conformable to what I ſhall recommend in the nineteenth chapter, upon the removing of trees.

Firſt, About the middle of October you ſhould go into the nurſery; for thoſe who come firſt always pick out the beſt trees. This is a very proper time to take up Peach trees, though the leaf is not yet fallen; and if your ground is not ready to receive them, bury them, in the mean while, in a trench, one by one, and not in a bundle, as is practiſed by thoſe who do their buſineſs in too great an hurry.

Secondly, You ſhould take care not to chuſe ſuch as have been headed down. I ſhall explain this term, for the ſake of thoſe who may not underſtand it. It muſt be obſerved, that a Peach differs from other trees, which are not tranſplanted till they are two, three, or four years old from the budding, whereas this ſhould be moved after the firſt ſhoot, that is, at the end of the year; and as it often happens,

pens, that the nurſery-man cannot diſpoſe of them all within the year, they cut down thoſe that are left, about the end of March, or in April, to the thickneſs of about half an inch above the bud, from whence it ſoon makes one or more new ſhoots; but theſe trees ſeldom ſucceed well, and ſhould not be choſen; it is eaſy to diſtinguiſh them, and is very material to be attended to.

Thirdly, You muſt take care that they are healthy, that the gum has not attacked them, and that they are of a proper ſtrength; the largeſt are by no means the beſt, becauſe they rarely are furniſhed with good eyes, below the place to which they are to be headed down, and the ſmalleſt are generally weak, and do not promiſe ever to make vigorous trees. Avoid both theſe extremes, and chuſe thoſe of a middling ſize, in which you find ſtrong eyes near the bud, which is the moſt eſſential point.

What I have hitherto ſaid, relates particularly to dwarf trees; but in the choice of ſtandards and half ſtandards, you muſt not only avoid the ſame inconveniences, but obſerve that the ſtems are ſtraight, ſmooth, clear, free from moſs, and that they have good bodies; that is, a good inch in diameter, or three inches in circumference at the bottom; for if they are much leſs, you may depend upon it, they will be always weak; they will take root indeed, and live, but they will not grow ſo much in four years, as a good one will in two; beſides that, they wear out ſooner, and the fruit will never come to perfection. You ſhould take particular care, that the bud has ſhot ſtraight, and that it does not grow crooked; for from thence it ſometimes happens, that notwithſtanding all your pains to divide the branches of the tree equally, the ſide on which the bud twiſts, will outgrow the other, and this renders the tree very defective.

Be cautious in taking them up, that they dig round the ſtem at a proper diſtance, that the roots may not be injured, and reject thoſe which are badly taken up, or are cankered at the root.

As ſoon as they are taken out of the ground, let them be tied up in bundles, with labels to diſtinguiſh the ſorts, and a great deal of ſtraw, which you will have ready, to prevent either the ſtrings, or the ſaddles of the animals which carry them, from rubbing off the bark.—Let the roots at the ſame time be packed in ſtraw, that the winds and ſun may not dry them. —Theſe precautions, though very neceſſary, are ſometimes neglected.

Notwithſtanding all theſe directions, thoſe who have it not in their power to act for themſelves, will no doubt find it very difficult to make choice of a perſon whom they can entruſt; but I would adviſe them to enquire out a good nurſery-man, and put it upon his honeſty to ſupply them properly, upon condition that he ſends nothing but what will anſwer in all the particulars I have laid down. Oblige him at the ſame time to inſure all the ſorts, and keep back part of the price till you are aſſured of it. The nurſery-man ſaving by this means what he would otherwiſe be obliged to give to a third perſon, and being willing to get your cuſtom, will find it his intereſt to ſupply you with none but what are good, and thus your advantage becomes his own.

The Peach is budded upon three different ſtocks, *viz.* upon that raiſed from its own kernel, upon the almond, and upon the plum. They bud however but few upon the firſt of theſe, which is too ſubject to gum, and therefore generally make uſe of the two latter. In the choice of theſe you muſt be guided by the quality of your ſoil; if it is light and ſandy, you ſhould prefer the almond ſtock, upon account of its tap root, which, by ſeeking its nouriſhment deeper in the earth than the plum, is defended better in a time of drought.

If the ſoil is ſtrong, and the bottom either gravel or ſtiff clay, you will chuſe thoſe upon the plum ſtock, becauſe the roots of theſe do not run deep, and are ſufficiently nouriſhed in a moderate depth of ſoil.

The beſt way is to purſue the ſame method that has been before practiſed in the place where you are ſituated; for there are few countries where this fruit has not been cultivated, and it is naturally to be ſuppoſed, that that kind of ſtock is the beſt, which, after a good deal of experience, has been moſt generally uſed. However, notwithſtanding this general rule, it ſometimes happens, that one of the two ſorts will be leſs ſubject to gum than the other, eſpecially in land, which is of a middling ſtrength, neither too light nor too ſtiff.

The Peach may alſo be budded upon the apricot, and will ſucceed very well, but it is ſeldom practiſed except where there are too many apricot trees, or if, for want of other ſtocks, you are deſirous to propagate ſome particular curious ſort of Peach in this manner, in order to produce fruit ſooner than in the common method.

In caſe of neceſſity the Peach may be budded upon its own ſtock; and this is a very good way, when a young tree happens to bear ſome bad ſort of fruit. This ſhould be done in the month of September, upon the firſt year's ſhoot, or at moſt upon the ſecond; but to do it with greater certainty, it will be proper, in the month of March, to cut down the trees you would bud, within twelve or fifteen inches of the ground. Soon after this, they will make ſeveral young ſhoots from the ſtem, which you will take care to train, by rubbing off the buds in ſuch a manner as to leave only four good ſhoots at proper diſtances, which will be thrown out very vigorous, and upon theſe you bud with eaſe at the end of ſummer. They generally ſucceed very well, provided they do not gum; and to guard againſt this, you muſt take care not to bud while the ſap is up.

CHAP. IV.

Of the ſituation and expoſure of Peach Trees, and the manner of preparing the ground for them.

THE tender Peaches, generally ſpeaking, do not thrive well in an open ſituation in every country; even in our climate, the cutting winds, which happen in the ſpring, the cold rains, and the white froſts, often deſtroy the bloſſom, as well as the leaf, and the fruit rarely ſets. In the hot countries, the violent heat of the ſun deſtroys them after they are ſet, and they adhere ſo weakly to the ſtalk, that the leaſt wind blows them down, and leaves very few to ripen; thoſe which do eſcape are taſteleſs, and have neither the juice nor flavour which they have in a more temperate climate. There are ſome common ſorts which grow about Fontainebleau and in all the ſouthern provinces, which being of a more hardy nature, and of a middling ſize, are not ſubject to theſe accidents, and moſt generally reſiſt the injuries of the weather. Theſe grow as well in vineyards as in gardens, without any management; but in compariſon with what we raiſe here, they hardly deſerve the name of Peach. Theſe are not deſirable kinds, and therefore I diſtinguiſh them from thoſe hard Peaches which are called Preſſes, or in ſome provinces, Auberges, or Mirlicotions: This ſort ſucceeds perfectly in the open air in all the warm countries, and has a much higher flavour than it has here, which is its chief merit, for the fleſh is very hard and dry; however, for want of better ſorts, they are well contented with this, and raiſe it in great abundance; the cultivation is very eaſy, and requires no directions.

But to return to our tender Peaches. It is certain from all experience, that they will not thrive well but againſt an eſpalier and wall; and even in this climate, there are but two expoſures that ſuit them, *viz.* the ſouth and eaſt; nevertheleſs I know many people who plant them to the weſt, and in ſome places they ſucceed, though it is not common. I once planted two walls of this aſpect of 150 fathoms each, and had the patience to train and manage them during eight years, without receiving any advantage. Weary at length of ſuch an unprofitable cultivation, I headed them down ſome years ago, and budded them all with the Queen Claude plum, which in four years almoſt covered my wall, and produced very fine fruit. I ſhould therefore adviſe all thoſe who are in the ſame circumſtances to purſue the ſame method, if their trees are proper to receive the buds; but thoſe who plant young trees ſhould never put any upon this aſpect, at leaſt not in our climate, nor in a ſoil ſo cold as mine; though, as I ſaid before, there are places where they will ſucceed pretty well in this expoſure, eſpecially in gardens that are well ſheltered. In the more ſouthern climates, they may thrive even better in this than in either of the others; but every one muſt judge of this according to the country he lives in.

Another circumſtance particularly to be attended to, is never to plant theſe ſorts upon a wall built againſt a bank of earth, ſuch as the walls of a terrace; for though the trees will bloſſom, the damp communicated to them from the wall, generally kills the flower, which, inſtead of ſetting for fruit, drops off. Beſides, theſe ſort of walls are commonly full of ants, which deſtroy the trees; and the moiſture that ſoaks through, ſoon waſhes down the mortar from the bricks.

To conclude: The ſituation of your trees being determined, relative to the circumſtances I have mentioned, nothing remains but to plant them, a matter that requires equal attention.

If you make a new plantation, you ſhould have trenched up your ground in good weather ſix feet from the wall, and three feet, or at leaſt two feet and a half deep, if you do not ſooner come to gravel or clay; but if you find either of them nearer the ſurface, you muſt leave off; for if once you break through the gravel, and lay good earth in its ſtead, you may be certain of loſing your trees. I am convinced of the truth of this by experience, and the reaſon is this: The rain ſtanding ſo long in this kind of reſervoir of clay or ſtone which you have made, in a few years rots the roots, and they will die as often as you plant them; for the earth itſelf becomes putrid, and no longer retains any virtue: ſo that you will be obliged to deſiſt from planting. However, you muſt not be diſcouraged, if you meet with theſe kinds of ſoils; if there is a foot and half, or two feet of good earth, your trees budded upon the plum ſtock will ſhoot very faſt; eſpecially if it is a freſh ſoil, or has been planted with other ſorts of fruits: for I muſt obſerve, that if it has been long planted with Peaches, the ſalts proper for the nouriſhment of theſe trees will be exhauſted, and it ſeldom happens that a new plantation of the ſame will thrive. The remedy in this caſe will be, to take away the old earth, and replace it with freſh, if you have any near enough, which ſhould be made about two feet and half deep, and five or ſix wide. If you have none, or that you are obliged to fetch it from a great diſtance, at a conſiderable expence, you may lay ſome rotten dung, and let it be well dug in with a fork, mixing it with the old earth as equally as poſſible, ſo that there may be an equal quantity from the top to the bottom. The dung ſhould alſo be kept at ſome diſtance from the roots, otherwiſe it may heat and canker them. I have often experienced both theſe methods, and they have ſucceeded, at leaſt for ſome time. This kind of preparation puts the trees in a good way for five or ſix years, though it is by no means certain that they will continue in it. For in this time the roots being often obliged to extend themſelves into the neighbouring earth, which they find worn out, and exhauſted, the tree makes very weak ſhoots, and at length dies.

The ſame practice is to be obſerved to renew an old plantation; but the beſt method to make your ſoil moſt profitable, is to change the ſorts; that is, to plant kernelled fruits in the place of ſtoned fruits, and the contrary: but ſince it rarely happens that you have a great many good aſpects, and as thoſe you have muſt be made uſe of for ſuch ſorts of fruit as require them, the directions before laid down muſt be purſued.

CHAP. V.

Of the manner of planting the Trees.

YOUR ground being prepared, you will trim your trees; that is, ſhorten and tip the roots in ſuch a manner, that the part which is cut reſts upon the ground, and cut off all the fibres. A hole is then to be dug, proper to receive the roots, and the looſe earth thrown in upon them, which ſhould be ſettled between them with the fingers. When they are entirely covered with earth, you ſet the tree upright, by cloſing the earth gently all round with your foot, taking care that the bud is quite even with the ſurface of the earth. You ſhould chuſe a good day for this operation, when the ground is in good order, neither too dry nor too wet; but if this cannot be avoided, you may plant them as I have directed above, only omitting to tread the earth round them, if it is very wet; but, in either caſe, a pail of water may be thrown down, to ſettle the ground, and make the trees take root the ſooner. Care ſhould be taken before they are watered, to cut them down to ſix or eight inches above the bud, and turn the wound next to the wall. When they are headed down, they ſhould be held very ſteady with one hand while they are cut, that the force uſed in cutting them may not diſturb the root. I ſuppoſe here, that the ground is ſoft, and well ſoaked; for if it is dry, it will be ſufficient to place the foot upon the root, ſo that the point of the ſhoe may bear lightly upon the bud. The ſame precautions are to be obſerved with regard to ſtandards or half ſtandards, if you plant any between the dwarfs; but as theſe are budded at the top of the ſtems, it is of no conſequence whether they are planted a little deeper or ſhallower; the moſt eſſential point is, to range their heads exactly upon the ſame level, that is, at the ſame diſtance from the coping of the wall.

I muſt now give ſome directions for the diſtances at which they are to be planted.

If your walls are not above ſix, ſeven, or eight feet high, I ſhould adviſe the planting none but dwarfs, and thoſe at fifteen feet diſtance from each other, eſpecially if your ground is freſh; for in ſeven or eight years, if they are well trained, they will cover the wall entirely.

If your ground is old, and your walls are above nine feet high, ſome half ſtandards of about four feet may be planted in the ſpaces, provided that as the dwarfs ſpread, you cut away every year the lower branches of the half ſtandards; and at the end of ſix years, or thereabouts, when the dwarfs have reached half way up the wall, you may entirely take the others away, that theſe may have room ſufficient to extend themſelves.

In this laſt caſe, that nothing may be loſt, you may follow a method I have practiſed, which is to ſlit-graft your half ſtandards in the month of March with plums or apricots; if they are upon plum ſtocks, they ſhould be grafted below the old bud, and in the autumn following they may be taken up, and removed to another place. Theſe make good trees planted in a half-ſheltered ſituation, which bear very ſoon, and having ſtronger ſtems, reſiſt

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the winds better than any others. I have grafted a great number in this manner, which ſucceeded ſo well, that out of eighty which I removed in one year, only one failed. Take them up therefore, and replant them in the manner I adviſe in the ſixteenth chapter.

If you prefer grapes to half ſtandards, you may plant ſome cuttings either of the *Muſcat*, or *Chaſſelas*, which will produce you fruit for ſome years; and when your dwarfs want room, they may be taken up in the ſame manner as the half ſtandards: But remember to leave at leaſt a foot and half ſpace between the extremities of the dwarfs which were pruned in the winter, and the loweſt ſhoots of the half ſtandards, or the ſtem of the vine; for as they will grow away freely, they muſt not be incommoded with the ſhade of others; and beſides, there muſt be ſufficient room to lay in the new ſhoots.

If your wall is ten or twelve feet, or more, you will find it neceſſary to plant ſtandards of ſix feet between the dwarfs, otherwiſe you will be a great while before you can expect to ſee the wall covered; and perhaps it never will be ſo entirely, though the diſtance is quite ſufficient for both of them to grow, without interfering with each other.

There are now but two things more, neceſſary for the ſucceſs of your trees; the firſt is, that the wall is in good repair; and the ſecond, that it is furniſhed with a treillage.

Firſt, In order to have the walls in good repair, it is neceſſary that they be well coated with plaiſter * on the ſide next the trees, and with good mortar of lime and ſand withoutſide, if you do not chuſe to be at the expence of the former. Particular care ſhould be taken that they are well coped with plaiſter, though in places where this cannot be obtained, mortar muſt be made uſe of; but it ſhould be made very ſtrong; that is, two fifths of good lime, newly burnt, to three fifths of ſand, with as little water as poſſible; for if the mortar is weak, the froſts will make it peal off, the rains ſoak into it, and run it down, the ſtorms ſcatter it about upon the trees and fruit, which is ſoiled, and vermin of all ſorts, particularly the wood and houſe mice, infeſt all parts of the wall, and deſtroy the fruit about the time of its ripening. Happy are they who have it in their power to build them with brick, as they are in great part of Italy. Theſe walls once built want no repairing, and inſects cannot get into them; inſtead of that, our plaiſter is but of ſhort duration, and requires every ten or twelve years, to be new coped, and ſometimes new coated. In the ſecond place, your walls muſt be ſupplied with a good treillage, which requires a full explanation, for they are very little known beyond the neighbourhood of Paris,

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* The plaiſter ſpoken of here, means what we call Plaiſter of Paris, and is more expenſive than common mortar.

Paris, and even there, very few are appriſed of the advantage of them; beſides, the expence appears to be ſo exorbitant, that thoſe who are inclined to it, do not know how to procure them in the countries diſtant from Paris.

Various methods are employed for obtaining a treillage, all of which are very indifferent; ſome make uſe of large wire, which they ſtretch five or ſix times along the wall, one above another, and faſten it at diſtances with large nails. Others form this wire into lattice work, like thoſe made of wood. Both theſe methods are equally injurious to the young ſhoots of our Peach trees, for the wind working them againſt the iron, rubs off the bark, and the gum which comes out ſoon after, kills a great number of them; beſides, theſe wires are placed ſo far apart, that the ſhoots cannot be laid at proper diſtances, nor tied firm; and it is even impoſſible to diſpoſe properly ſome of the great branches, which ſometimes require to be altered, and placed higher or lower, as there is occaſion. There are alſo other inconveniences, which I forbear to mention.

The little ſticks made uſe of by ſome, are no ſtronger than the wires; for one blaſt of wind ſometimes looſens a whole tree, the branches are broken and bruiſed on all ſides, and the fruit falls off; beſides, the adjuſting this, will take up as much time as the placing all the twigs. They are alſo obliged to drive in pegs or nails to faſten the ſticks upon, which ruins the plaiſter of the wall, and makes an infinite number of holes, which become ſo many harbours for all inſects, and the walls want continual repairs; ſo that this is at all events a poor expedient.

Others in building their walls, introduce bones of ſheep, at about ſix inches diſtance from each other, which project about three or four inches from the wall, and ſerve to tie their trees to; but in my opinion, this makes a moſt diſagreeable appearance, and the conſequence of it is, that you are frequently obliged to croud ſeveral ſhoots cloſe together, which makes the tree lay very irregular.

The little pieces of wood ſtuck full of nails, which the people in and about Montreuil make uſe of, are, in all reſpects, leſs dangerous; and I confeſs, that upon theſe the ſhoots may be placed with ſufficient ſtrength and propriety; perhaps too, they may have ſome reaſon to think, that the fruit which grows cloſe to the wall, ripens ſomewhat ſooner, by means of the ſun's reflection, than when there is a treillage behind it; but at the ſame time, the driving of three or four hundred nails in the extent of a tree, when full grown, and the putting ſo many bands round each ſhoot, to keep them in their places, is a work that requires great time and pains; and by the obſervations and compariſons I have made of each method, even thoſe who are moſt expert at it, cannot in two hours and a half do ſo much work, as may be done upon a treillage in an hour at moſt. This difference in the time is a very conſiderable object, not to mention the expence of nails and wood, a great part of which muſt be renewed every year; in ſhort, what is practiſed at Montreuil, may not be done ſo eaſily elſewhere. Theſe people have their plaiſter at their doors, and it does not coſt them above * 4 livres the † load, while in all other places, they pay § 8, 10, 12, and even 15 livres. Again, their earth is full of ſmall ſtones, which they pick up themſelves, and mix with the rubbiſh from their old walls. Theſe are the materials they uſe, and the expence is trifling. The walls ſo built, being full of joints, and coated with plaiſter of a good inch thick, eaſily receive the nails in every part; but in the ordinary walls, which are built with hard ſtone and mortar, and often with earth, or at beſt only new-coated with plaiſter and rough pieces of ſtone, the nails meet with nothing but ſtone, which they cannot take hold of, and the mortar is too ſoft to hold them faſt. This method therefore of laying trees becomes impracticable, and I know of no good one but the treillage, without which, I affirm, that a tree cannot be well trained. Experience will convince every

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* 4 livres is 3 *s.* 6 *d.* ſtirling.

† The muid is nearly thirty-three buſhels Engliſh.

§ 8 livres is 7 *s.* — 10 livres, 8 *s.* 9 ½ *d.* — 12 livres, 10 *s.* 6 *d.*—15 livres is 13 *s.* 1 ½ *d.* ſtirling.

one of the truth of this, better than all I can ſay upon the ſubject, and it is by this alone, that the great utility of it can be known as well for training the tree properly, and keeping it always full without confuſion, as for the expedition of working in the time of laying in the ſhoots, and for the preſervation of the fruit.

CHAP. VI.

A deſcription of a Treillage, and the manner of making it.

THE great utility of the treillage is acknowledged by every one, but the expence is thought ſo great, that many cannot afford it; I pity thoſe who upon this account are deprived of it, but I aſſure them, whatever means they uſe to ſupply its place, they will never ſee their walls regularly furniſhed, nor their fruit, generally ſpeaking, in perfection: they muſt therefore confine themſelves to fewer trees; 20 fathoms in a flouriſhing condition, will give them more pleaſure as well as more profit, than three times that quantity ill managed; and this is all the advice I can give them. But that I may be of ſervice to every body, I ſhall lay down ſome rules of œconomy upon this head.

To this end then, a perſon who lays out ground, and who always has a profit upon the workmen employed, and thoſe great treillage makers who are always well payed for their reputation, are not proper to be employed upon ſuch an occaſion; for the making our treillage does not require ſo much ingenuity as the planting an arbour, in which, beauty only is expected. It is indeed a very ſimple operation, ſo that a perſon who has the leaſt knowledge of it, may learn the method in twenty-four hours, as well as if he had practiſed it all his life-time; and near Paris, there is ſcarce one in twenty to be found who is not capable of performing it.

The bundles of wood fit for immediate uſe, which the merchants of Paris generally ſell for * 40 ſols or more, are ſold for about † 25 or ‡ 30 in the foreſt where they are cut out, or by the merchants in the country who make them. Theſe bundles contain twenty-five poles, which they call rods, of nine feet long, and the ſhorter theſe rods are, the greater number you have in proportion; for in a bundle, there ſhould always be two hundred and twenty-five feet: this is the rule; but there is a double advantage in having all the rods of nine feet length, as well upon account of putting them together, which takes up ſix inches, as for the greater ſtrength of the work; but this depends upon the will of the merchant, who is not always very eaſy to deal with. You ſhould take

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* Two livres, or 1 *s.* 9 *d.* ſtirling.

† 1 *s.* 1 *d.* half farthing.

‡ 1 *s.* 5 $\frac{3}{4}$ *d.* ſtirling.

care that the wood has no ſap, which makes it very brittle, and there is a good deal of loſs in ſhaving it. The ſap is known by its colour, which is yellowiſh; but young poles are the beſt for this uſe, that are ſtrait, without knots, or at leaſt few, and the ſap of theſe is white.

A bundle of rods makes very near two fathoms ſquare of work, allowing the lattice eight inches by ſeven, which it ought to be;

	liv.	ſols.
ſo that half a bundle makes a fathom, which, at the price mentioned above, is worth	0	15
A fathom requires four hooks, which ſell at 5 or 6 ſols per dozen	0	2
For wire, at 10 ſols per lb.	0	2
For the making each fathom	0	5
For painting the treillage twice in oil, of the colour of the wood	0	10
	1	14*

Thoſe who chuſe to paint it green, muſt reckon that article treble; but that is of no ſervice to the trees, which is the point we have in view.

This expence ought not, in my opinion, to be thought ſo extravagant, as to prevent any one from making a treillage; ſince from the above computation, it follows, that it would coſt but * 25 piſtoles to make one of an hundred fathoms long, and nine feet high; it will be allowed however, that gardens become every day leſs expenſive.

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* 1 *s.* 5 *d.* ſtirling.

It is proper now to give a deſcription of the treillage, for the ſake of thoſe who have not ſeen it, that they may be able, wherever they are ſituated, to make one properly.

The wood I have been ſpeaking of, ſhould be cut out of young cheſnut poles, of ten or twelve years growth; if theſe are not to be procured, they may be made of heart of oak, which is as good; but the former works more freely, and is commonly to be procured every where. You chuſe in the wood, the longeſt and ſtraiteſt poles, and thoſe that are not barked by deer or other cattle, which in ſome places, do them great damage. The largeſt poles are beſt, becauſe they may be cut into two or four, if there ſhould be occaſion. Each rod, when planed and ſquared, ſhould be an inch, or fourteen lines † broad, by nine or ten thick, and it is the workman's buſineſs to mark off the thickneſs of the rod before he planes it.

Notwithſtanding all the care that may be taken in chuſing the ſtraighteſt poles, it ſometimes happens, that in ſuch a length there will be ſome crooks; but this is corrected by a ſecond operation, when the wood is cut out,

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* 20 *l.* ſtirling.

† About an inch and one eighth.

which they call framing the treillage. The workman holds the pole in his left hand, reſting it upon a block, and with a bill makes a notch obliquely under the crook; he then leans his hand carefully at ſome diſtance from the notch, while the pole is held a little above, by an iron hook, fixed in a treſſel, and ſtraitens it; and as many crooks as there are in the pole, ſo many notches muſt be made, till the whole is made ſtrait, and looks well to the eye.

The wood being thus prepared, the next thing is to put it together, and the method is this. They meaſure firſt how many horizontal laths the wall will require, for making the lattice work, which I ſuppoſe will be about nine inches by eight, including the thickneſs of the wood. From hence then it follows, that a wall of nine feet high will require twelve; for 9 multiplied by 12, is 108; which is the height of the wall in inches.

They mark off theſe ſpaces upon the wall with chalk, in lengths of about eight fathoms. When this is done, they drive into the wall two iron pins from one ſpace to the other, upon the lines where the hooks are to be placed, and ſtretch a ſtring from one pin to the other, to take the exact level for the hooks.

To explain this clearer, I will ſuppoſe three rows of hooks are required to hold the treillage faſt; the firſt, at the top lattice but one; the ſecond, at the bottom lattice but one; and the third, in the middle between theſe two; that is, about the ſixth or ſeventh. This done, theſe holdfaſts are fixed checquer-wiſe, three feet every way, with plaiſter and ſome pieces of tile; but the mortar, though very good, will be of no uſe, unleſs it is quite dry before the work is begun. In caſe of urgent neceſſity, or if you have no plaiſter, large pegs of hard wood may be made uſe of, which are driven very tight in the joints between the ſtones, and in theſe pegs the holdfaſts are driven, which muſt for this purpoſe be made four or five inches long in the ſhank; whereas thoſe fixed with plaiſter ſhould be ſix or ſeven inches, and divided at the end ſomething like a ſwallow's tail, to faſten them better in the wall. Whatever way they are uſed, they ſhould be turned up about an inch at the end, in order to hold faſt the rods. I have given this explanation only for thoſe who are entirely unacquainted with this method.

The holdfaſts ſhould project from the plane of the wall about an inch, to receive the rods which fit into them, and which, in order to ſtrengthen them, are faſtened in with a piece of wire; they ſhould alſo be flat, and about a * line and half thick, by four or five broad. Thoſe that are deſigned to be fixed in wood, may either be round or ſquare, about the ſize

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* Not quite the eighth of an inch.

of a large nail, but the bend or hook muſt be flat.

The holdfaſts being fixed all along the wall, the three rows of rods are then laid upon them, (I uſe the terms, laths, rods, and treillage, indifferently, as they are the ſame thing). A third operation which the rods demand, muſt not be omitted, which is to chop them off to nothing, at about ſix inches from each end; ſo as the more eaſily to ſplice them together with pieces of wire.

When theſe three rows of lattice are fixed, the moſt difficult part of the work is done. The diviſions for the ſtandards ſhould now be ſet out, which muſt be about eight inches apart, including the thickneſs of the wood. Theſe diviſions are marked with chalk, as before, upon the higheſt and loweſt row of lattice, obſerving to level them by a line, that they may all be quite upright and even, which ſhould be done at firſt.

In order to place the remainder of the horizontal laths behind the ſtandards with more convenience, they ſet up only two ſtandards about ſix feet apart, to which the nine laths are faſtened with wire, being the remaining ones of the twelve which I have ſaid are to be fixed. When they are all placed and faſtened, the reſt of the ſtandards are fixed, and the whole is made faſt with wire.

I believe no one can now be ignorant of the manner of making a treillage: I ſhall only add, that the wire ſhould be made very faſt with pincers, which you hold in your right hand, while with the left you twiſt the wire, keeping it always rolled up in a ball, and when you have turned it three or four times round the laths, you cut it off with the pincers.

It is to be obſerved as to the wire, that the finer it is, the quicker and better the work is done, provided it is ſtrong enough to bear working. It ſhould for this purpoſe be properly nealed in a fire, neither too little or too much; for when it is done too much, it breaks, by holding in the pincers: It ſhould remain in the fire a full quarter of an hour.

But to return to the treillage; I muſt not forget to obſerve, that whether the walls are built upon level ground, or upon a ſlope, the ſtandards muſt be exactly upright, and the laths fixed as I have before mentioned. If they are upon a ſlope, the fixing them upright depends upon making the lines for the holdfaſts nearer each other; ſo that the laths may follow regularly the inclination of the wall. If it happens, that one part of a wall is built upon higher ground than another, ſo that twelve laths are required at one end, and ten only at the other, the plan of the lattice ſhould not be altered at the top of the wall, but rather let the laths be irregular at the bottom.

The treillage being finiſhed, there remains nothing more but to paint it; and as it is generally painted all over, I ſhall only obſerve, that fine weather ſhould be choſen for this purpoſe, and that you ſhould not be ſparing of white lead or turpentine, which dries faſt; for if the rain comes upon it before it is dry, it will make it peal off.

By adhering ſtrictly to theſe directions, every one, in all countries, with a moderate degree of knowledge, will be able to have the pleaſure of furniſhing his walls with a treillage; for without that (I repeat it again) he can never hope to have any ſatisfaction in his trees; ſo far from it, that very few gardeners are capable of making up by their induſtry, the want of this advantage.

C H A P. VII.

Of Pruning.

IT is the general cuſtom to prune Peach trees when they are in bloſſom, though ſome wait till the flower is dropt, and the fruit ſet, upon a ſuppoſition that what is left will be more certain of coming to perfection. But this laſt method is ſubject to many inconveniences. Suppoſing your tree is in bloſſom when you begin to prune, it is impoſſible, notwithſtanding your utmoſt care, to avoid rubbing off a great number of the flowers; and if you defer it longer, it will be ſtill more injurious. The ſap which ſhould have nouriſhed the bottom part of the ſhoots, (if they had been ſhortened at a proper time) will be all carried to the extremities, and it is there only the fruit will ſet; the conſequence of which is, that in order to have any fruit, you muſt leave your ſhoots of an exceſſive length, which ruins the tree; or you muſt give up the fruit, to preſerve the tree; a cruel alternative! In the firſt inſtance, if the trees are only in bloſſom, it requires great care to faſten them to the treillage after they are cut; you injure the flower, and employ a great deal more time than if you had pruned them ſooner.

Moreover, the buds, which begin to ſhoot at the ſame time the flower opens, in a great meaſure hide your work, and you can no longer diſtinguiſh it clearly; beſides that ſo many ſhortened branches produce a great number of ſtumps, which will be to cut out the next year; the quantity of bloſſoms too will prevent you from placing the bands ſo properly, or laying in the ſhoots ſo faſt, as you might otherwiſe do; you cannot ſee the defects of the wood, or the old ſtumps that want taking out; and, in ſhort, you muſt work by gueſs.

I experienced all theſe inconveniences the few firſt years I worked alone, by following the general rule: but afterwards, upon trying what effect an earlier pruning would have upon ſome trees, the fear I had, according to the vulgar opinion, of their being too forward, and that the ſpring froſts would deſtroy the bloſſom, ſoon vaniſhed. The trees I pruned at the end of January, and in February, were not forwarder than thoſe I pruned in April; nor had the bloſſom or wood ſuffered any injury. I continued in the ſame manner to prune a greater number the next year, and with the ſame ſucceſs. In ſhort, the third year I pruned all my trees in the ſame month, and have purſued that method many years ſince with entire ſatisfaction. I therefore adviſe every body to follow my example, notwithſtanding the common prejudice againſt novelties; for it will ſoon appear, that the work is done quicker, and in all reſpects better; you ſee clearer at leaſt what you do, and the good buds are eaſily diſtinguiſhed in this month from the bad; for the ſap will have begun to ſwell the good ones, if the winter has not been too long and ſevere; but if that has been the caſe, it muſt be deferred a little longer. What I obſerve of diſtinguiſhing the good buds from the bad, is of great conſequence; and to enable you to do it, the ſap muſt have riſen; that is, they muſt be ſwelled in ſome degree. It will no doubt be objected, that in January and February the winter is not yet paſt, that ſuch buds may then be good, and afterwards die; and in that caſe there would be no reſource left, of laying in ſhoots for bearing. I grant this fact; but I anſwer, that if the ſharp winds blaſt the flower in March or April, thoſe trees that are not pruned, are equally liable to the ſame accident: Beſides, there are four times as many bloſſoms left, as can poſſibly ſet; and if they all ſucceeded, I might allow three quarters of them to drop off, without ſuſtaining any real loſs; ſo that I do not run any great hazard; and if I did, I have found ſo much greater advantage from my own method, that I ſhould overlook it. To what end then is ſuch a quantity of fruit to ſet, ſince, in May or June, all that exceeds the proper burden of the tree is to be pulled off? In ſhort, the laſt, though by no means the leaſt, advantage is, that when the fruit is fairly ſet, it grows much faſter, than when the trees are pruned in full bloſſom; and the reaſon is plain; the ſap having been leſs divided, becauſe it has not had ſuch a number of ſhoots to nouriſh, is carried in greater abundance to thoſe that are left. I have experienced the truth of this, and have never ſuffered the leaſt inconvenience ſince I followed this practice. I have always had a great quantity of fruit, except in the year 1741, which was generally fatal to all fruit. Such a continued experience ought to be convincing againſt the theory of all thoſe who are attached to their opinions, and prejudiced againſt all methods of which they are ignorant.

I ought not to omit one caution, which is of more importance than may at firſt appear; that is, never to begin to prune a tree, without

out firſt untying all the branches; for then you are not ſo liable to break off the ſhoots, and you can the more eaſily clear the tree of all dead leaves, old oſiers, *&c.* and deſtroy the harbours of inſects, which will devour your fruit, particularly the Violet Peaches, which the ſlugs and ſnails are very fond of.

I now proceed to the method of pruning. In this you muſt conſider the ſtate of the tree, whether it be young or old, healthy or unhealthy; the progreſs it has made will point out to you what is neceſſary to be done; and in ſhort, you muſt treat it in proportion to its ſtrength and condition.

To begin with the operation of the firſt year: If you find the tree has made only weak ſhoots, you muſt reduce them to two or four, well placed on each ſide, and of equal ſtrength, which muſt be ſhortened to five or ſix inches; if there is a ſmall one in the middle that will bear fruit, you may leave it; but if it is as ſtrong as thoſe on the ſides, cut it clean out; for as the middle will always furniſh itſelf ſufficiently, you ſhould attend wholly to the ſides. The future ſucceſs of the tree depends entirely upon the form that is given to it for the two firſt years.

If it has made two ſtrong and vigorous ſhoots well-placed, one on the right, and the other on the left, preſerve them, and cut them down to eight or ten inches. You may alſo leave here and there a ſmall one for bearing.

It is the practice of moſt gardeners to cut out without mercy all theſe ſtrong and vigorous ſhoots, ſuppoſing that they are very injurious to the reſt, and to prune upon the ſmall ones; but experience has taught me not always to follow ſo ſevere an example. However, in pruning ſome trees that have been too vigorous, I have ſometimes cut out as many of theſe ſtrong ſhoots as ſtarved and impoveriſhed the reſt, and have been ſeven or eight years without being able to bring them into any form, or to procure any fruit; the conſequence of which was, that they paſſed into the oppoſite extreme, and became very weak and ſickly. This is an appearance I confeſs I never could account for; but it is a fact, and the cauſe of it is one of thoſe ſecrets in vegetation, which I ſhall not attempt to ſearch into; I can only form a conjecture, that the action of the roots which operate, and mutually aſſiſt the branches in the circulation of the ſap, being ſtopped by the repeated violences done to them, they become as it were tired with acting ineffectually; and that the ſap falling from the branches is in ſome manner loſt in the roots which remain inactive, ſince the head ſhoots no more.

On the contrary I have found, that by following the inclination of theſe ſort of trees, and by pruning the luxuriant ſhoots in a particular manner, they formed in a little time very handſome trees, which after two or three years, put out no more ſtrong ſhoots. If in the ſecond or third year they threw out any, I not only pruned them, but alſo the young wood they put out the ſame year; and this I did the better to divide the ſap. By this management my trees ſhot more moderately, and from thoſe branches which were at firſt bad, I had plenty of fine young wood, which ſoon covered all the wall, and bore fruit in great abundance. The only inconvenience I have obſerved in this practice, and which muſt be guarded againſt, is, that the tree may become bare of wood at the bottom, by the ſap being carried to the extremities of the ſhoots; but this is eaſily avoided, if the young ſhoots are pinched in May, and the head of the tree well thinned at the time of laying in the ſhoots.

If your tree has made only one ſtrong ſhoot, it muſt be taken clean out. If there are two, one on the ſide, and the other in the middle, you muſt alſo cut them out, for otherwiſe the weak ſide will die, and you can never give the tree any form. You ſhould alſo ſhorten the ſmall ſhoots, and not ſuffer one ſide of the tree to be ſtronger than the other. Theſe ſhoots however can never be ill placed, if you take care in the month of May to perform what I ſhall direct in the next chapter; for by thinning the ſtrongeſt ſide, the ſap will of courſe fly to the other: but as few will chuſe to take ſo much pains, it is proper to lay down ſome method of making amends for ſuch an omiſſion.

Thus much for the firſt year's management; let us now conſider it from the ſecond to the ſixth. I have already ſpoken of the method of treating ſuch trees, as are inclined to fling out too much wood, and which require a good deal to be left, in order to check their luxuriancy, and force them to bear. Thoſe that make but weak ſhoots muſt be treated according to their particular circumſtances; but above all things obſerve to keep the middle ſhort, and not to leave more wood on one ſide, than on the other. It very often happens, that one of the two ſhoots left on the ſides is ſtronger than the other; you muſt not therefore be enticed by the hopes or proſpect of fruit; but cut every thing clean out, that exceeds the ſtrength of the other, and leave all the ſhoots equally ſtrong.

One fundamental rule to be obſerved, is, that your whole tree ſhould depend upon two or four good branches, of equal ſtrength, which ought to produce all the reſt. Theſe you muſt take particular care to lay at equal diſtances from each other, and leave them as long as they will admit of; you may leave them twelve or ſixteen inches when they are ſtrong enough.

The middle-ſized ſhoots muſt be left in proportion to the vigour of the tree, about ſix or eight inches, according to the ſpace there is to fill up, and the diſtance from the bottom of the ſhoot to the fruit-buds, which is often pretty long, eſpecially in ſome ſorts of peaches; and as the fruit is our chief object, rules may be ſometimes diſpenſed with, and the ſhoots left a little longer. It muſt be obſerved that the good fruit-buds are always double, and have a leaf-bud between them; thoſe that are ſingle, though they have a leaf-bud, and blow pretty well, do not ſet for fruit, at leaſt but ſeldom.

Take care that you are not ſo covetous of fruit as to overload the tree with wood, which immediately throws it into confuſion, and ruins the middle and bottom. Thoſe old ſtumps and the weak ſhoots, which moſt gardeners value for bearing, muſt be cut out, if you have enough that are better, I mean of the middle-ſized ones, for by a ſhoot of ſome ſubſtance, the fruit will undoubtedly be better nouriſhed, and not be ſo liable to fall off, (notwithſtanding the common opinion, that the weak ones retain it better;) of which every one will be convinced, if they attend to it. It is only therefore for want of better, that you muſt preſerve any of theſe weak ſhoots; nevertheleſs there are ſome exceptions.

Firſt, if your tree is too vigorous, and requires a great burden of fruit to check it, you muſt leave a good many of theſe ſmall ſhoots. Secondly, if your middle-ſized ſhoots have no fruit-buds below the place where they ſhould be ſhortened, and you are deſirous of having fruit, you muſt leave ſome of thoſe that are ſhorteſt and beſt diſpoſed, for that purpoſe. I do not comprehend under the name of weak ſhoots, thoſe ſhort ones of one or two inches long, which have generally a cluſter of fruit-buds upon them. Theſe are very valuable and always produce the beſt fruit, and for that reaſon, I never take them out.

The uſe I ſometimes make of theſe weak ſhoots, is to cut them down to the firſt eye, to furniſh wood where a vacancy is likely to happen; one of theſe weak ſhoots, ſo pruned, may produce a better for the next year; if it is not wanted then, you may cut it down a ſecond time, in the ſame manner, till it is. Theſe kinds of ſhoots ſhould be carefully attended to, as they are very neceſſary, in order to keep the tree full, and to ſupply the place of the ſhoots that are exhauſted with bearing; and this method muſt be obſerved, as well in the middle-ſized ſhoots, as in the weak ones I here ſpeak of.

If your tree makes but weak ſhoots, you muſt examine whether the diſeaſe is in the root; if it is, pull it up; if not, preſerve it and lay ſome rotten dung to it, as I have directed in the eighteenth chapter. Dung often renews theſe ſort of trees, but as they decline, they muſt be pruned very ſhort, even upon the beſt ſhoots.

This is my method of managing Peach trees for the firſt few years, but I muſt not omit to mention, that it requires great care and attention to lay and faſten them properly to the treillage after pruning.

Firſt, As they are naturally inclined to run up in height, you ſhould be particularly watchful to keep the bottom well furniſhed with bearing wood; and there are two methods of performing this, one by pruning them well, upon which I have ſufficiently enlarged; the other, by bringing the ſhoots well down to the ſides, and laying them ſtrait, and at equal diſtances; you muſt be attentive too, that the ſhoots do not take a bad direction; but if they have, it muſt be remedied by ſeparating thoſe that grow together, as well as thoſe that are croſſed and crooked. This is effected by the help of oſiers and little ſticks, which bring them ſtrait. In ſhort, it is your own dexterity alone that muſt direct you in theſe little operations. But to proceed—

Second, Another circumſtance to be attended to in laying in the ſhoots, is, that the bud at the end of the ſhoot be ſo turned, that it may take its direction along the front of the treillage, and not behind it. This is eaſily ſeen, and if it gets behind, it may be brought back again, and ſupported by a little ſtick, or tied to the treillage, if there is occaſion.

I ſhall add to theſe obſervations, that the bands ſhould not be tied too tight, which often cut the ſhoots as they ſwell, nor ſhould they be placed under the buds in tying them; a little dexterity will prevent theſe defects, which, though they are not of very great conſequence, are nevertheleſs attended with inconvenience.

It often happens that ſome of the ſhortened ſhoots cannot reach the treillage; in which caſe, little ſticks muſt be wove in between it. An oſier twig is tied to the end of the ſhoot in a ſlip knot, and the other end being faſtened to the treillage, thus confines the ſhoot; this is more neceſſary if there ſhould be any fruit upon it, which would weigh it down, unleſs it is ſupported.

Theſe laſt obſervations regard Peach trees of all ages: let us now return to the pruning. I have remarked all that is neceſſary for trees in their firſt ſtate, and ſhall now ſpeak of thoſe of the ſecond and third. I ſuppoſe a Peach tree to be in its ſecond ſtate, when it is in full vigour and perfection; and in the third, when it begins a little to decline. Theſe cannot be too much cheriſhed, they ſhould be pruned very ſhort, and upon the beſt ſhoots only; the weak ones ſhould not be preſerved at all, becauſe in an old tree they produce but very ſickly fruit.

If by chance any of your old trees ſhould have put out a pretty ſtrong ſhoot from the bottom, you muſt preſerve it carefully, to ſucceed the old branches, which are cut away by degrees; but if it comes out of an old branch, cut it clean out. I have nothing more to ſay of theſe old trees; except that you ought to be very careful of them, ſo long as, in ſpite of old age, they continue to bear good fruit; but the moment they fail in that, they ſhould be pulled up.

As trees of the ſecond ſtate, that are in full vigour and bearing, are what our profit depends upon, they demand a more particular regard.

The generality of gardeners, who work without principles or judgment, and without troubling themſelves about conſequences, are very ſoon ruined by their bad conduct. This it is that gives riſe to the general notion, that a Peach tree never lives above twelve or fifteen years; but this is a groſs miſtake, for I have myſelf ſome that are above forty years old, and ſtill thrive pretty well. I had not the training them for the firſt twenty years, but they had been well managed, and ſince they fell into my hands, I have taken ſuch pains with them, that they ſtill bear very fine and good fruit. I have a great number more that I planted fifteen or eighteen years ſince, which are indeed very beautiful, and which I ſtill look upon to be in their infant ſtate; ſo that if I had a proſpect of living thirty years longer, and managing them myſelf, I am clear they would endure ſo long. To be convinced of this, you need only viſit the plantations at Montreuil, where you will ſee trees of the age I mention in the gardens of ſome, who no doubt have managed them better than they do even here in general; where they force them to bear, without troubling themſelves about their duration, becauſe the occupiers of the ground are obliged to make the moſt of it. I have ſeen a plantation of eight fathoms in length, which were all equally healthy and vigorous throughout, and which I judged to be about fifty years old. This opinion therefore of their not laſting long muſt be given up, for it is owing only to bad management, that they do not live as long as any other fruit trees. I ſuppoſe, when I ſay this, that they are planted in a good ſoil, and that no particular accidents happen to them; for if the ſoil is bad, if they are tainted with gum, or if the bugs or ants attack them violently, they will die in ſpite of all the care and pains you can poſſibly beſtow upon them. I have this advantage among many others, of being exempt from all theſe evils, which are not to be looked upon as peculiar to this ſort of fruit, and therefore all means ſhould be uſed to continue them in health.

The duration of a tree depends chiefly upon good pruning, and the whole art of this conſiſts in keeping it well filled with bearing wood in every part equally, and not leaving too much. This at firſt ſight appears eaſy, but it has its difficulties; ſuch as the proper choice of ſhoots, the progreſs the tree has made, the ſituation of the fruit-buds, the ſort of fruit, and many other circumſtances, for which ſome rules may be laid down; but there are particular inſtances which cannot be judged of but upon the ſpot, and depend chiefly upon practice.

Every one has a method of his own, and prunes according to his own ideas. Some ſhorten all the ſhoots, while others leave thoſe longer that are deſigned to bear fruit, and depend upon ſpurs for ſupplying wood for the next year. My method is quite different, and after a great deal of ſtudy and obſervation, I ſtill adhere to it as much the beſt.

I will ſuppoſe that the tree I am to prune, has been trained while it was young nearly upon my principles, and that it is regularly and well filled with wood; for if it is defective in any particular part, it muſt be treated according to the circumſtances it is in.

When I find a tree in good order, I firſt looſen it from the treillage, and then look for all the branches that are worn out, which it is eaſy to diſtinguiſh by their weakneſs and the bad ſhoots they have made. I cut theſe down to the great branch from whence they proceed, unleſs they have put out ſome good ſhoot, above which I ſhorten it, if there is no other near to ſupply its place. From theſe I paſs to the ſhoots of the year, and cut out all the rank ones, that is, ſuch as exceed the middling ſize. I cut out alſo all the weak ſhoots, unleſs it be neceſſary to keep ſome one to ſupply a vacant place, or as a reſource for the next year; in which caſe I ſhorten it nearly to the

thickneſs

thickneſs of a * crown-piece, as I before obſerved; except always the little cluſters mentioned above.

Having thinned the tree in this manner, there is nothing left but ſhoots of equal ſtrength, and I ſee my work clear. I have now nothing to do but to leave a proper quantity of wood, for which the following is the rule. I leave but one of all thoſe which have puſhed out from the ſhoot I ſhortened laſt winter, and that the loweſt, which will be a good one, by means of the ſummer pruning. If that has been neglected, the beſt of the loweſt muſt be choſen. After this ſecond reform, I proceed to the third, which is to ſhorten the ſhoots. I examine firſt whether my tree was loaded the laſt ſummer, and what ſort of fruit it is; accordingly I leave the ſhoots longer or ſhorter. If, for inſtance, it is a Magdalen or Violet, as theſe trees are always more vigorous than the other ſorts, I leave a little more bearing wood; but if it is a different ſort, and has not been too much loaded, I leave the ſhoots eight inches, if I have room; if I am ſtraitened, and have nothing below to ſupply the place of the worn-out ſhoots, I cut them very ſhort, leaving them only three or four inches; I generally leave one half of the ſhoots long, and the other half ſhort, by which means I keep the tree always full, and do not exhauſt it.

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* Or to the loweſt eye.

I have ſaid that I never leave but one of thoſe ſhoots which have been produced from that which was ſhortened laſt winter; but there are ſome exceptions; ſuch as when a neighbouring ſhoot has been deſtroyed by the gum; in that caſe, if I find two good ones of equal ſtrength, come out of the bottom of the ſhortened branch, or have a large vacancy to fill, I cut both of them down to five or ſix inches. If there is no immediate want of them both, and that I only foreſee a vacancy is likely to happen after the firſt ſhoot is worn out, I ſhorten the uppermoſt, and cut down the loweſt to the firſt eye, that I may be certain of a good one for the next year.

As to the extremities, I am governed by the room I have left upon the wall. If the tree covers it entirely, I prune ſo as to leave it a good foot from the coping, that I may have room to lay in the young ſhoots; for which purpoſe, I take out all the ſhoots that bare fruit the laſt year, and replace them with the new ones, which the bottom ought to ſupply.

Mr. De la Quintinie in treating of this, particularly recommends them to be left three feet from the coping of the wall. But I confeſs this appears to me to be more than is neceſſary, for walls are too valuable to have ſuch a ſpace left unemployed and uſeleſs.

It may perhaps be objected to my method of pruning only upon one ſhoot, which is to bear fruit, and not to produce wood, that I run great hazard of not having a ſufficient quantity of good wood for the following years. It will be ſaid that theſe ſhoots which ſpend themſelves in bearing fruit, will throw out nothing but weak ſhoots between the fruit not capable of bearing, that they will at laſt die, and conſequently the tree will become bare of wood.

This objection is plauſible, becauſe in fact, in the common method of pruning, the greater part of the bearing ſhoots are deſtroyed by being overloaded, and become incapable either of producing fruit or wood, ſo that they are obliged to cut ſome of them out the firſt year, and the reſt the ſecond or third; but this does not happen with me, and they die very late, as I ſhall make it appear.

When two ſhoots are left, one deſigned only for bearing fruit, and the other for producing wood; it naturally follows that the ſap is obliged to divide itſelf between them, and that the ſhoot deſigned for wood, which has no fruit to nouriſh, will flouriſh better than the other; but it is plain, that the ſap being carried only to my ſingle ſhoot, will have the ſame effect upon that as it would have had upon both the others; that is, it will both nouriſh the fruit, and produce wood: beſides, one part of my ſhoots are cut ſhort, as I have before obſerved, and I am provided with more reſources, whenever I perceive the leaſt danger of a vacancy. I do not therefore run the hazard ſo much to be dreaded; but I have moreover ſufficient experience of it, to convince any one who will make trial of this method.

The people of Montreuil in ſome reſpects follow my method, in leaving few ſhoots, and cutting out all little twigs; but they differ from me in loading their trees extremely, particularly the few firſt years. They leave the mother branches two feet, and two feet and half long, and prune at the ſame time upon a good part of the ſmall ones that have puſhed out between the leaves. It is true, the quality of their ſoil, in ſome meaſure, authoriſes ſuch a practice; beſides that, they do not concern themſelves about the duration of their trees, nor the beautiful ſhape of them: the only point they attend to, is, to reap a quick and conſiderable advantage; ſo that, after the firſt four years, the bottoms of their walls generally become bare of wood: this is a defect which a curious perſon ought not to ſuffer; but if any one, tempted by their example, ſhould chuſe to overlook it, that he may gather fruit very ſoon, he will moſt certainly miſcarry; unleſs he ſhould meet with a vein of earth exactly like theirs: this may happen, but it is ſo uncommon, that, of all my acquaintance who have tried this method, not one has ſucceeded. In ſhort, it may be ſaid in general, that it is a practice more to be admired than imitated.

CHAP. VIII.

Of rubbing off the Buds.

THere is no operation in the cultivation of Peach trees, (except the winter pruning, which cannot be diſpenſed with,) of ſo much importance, as the rubbing off the buds; and at the ſame time, none leſs attended to. The certainty of fruit, its beauty and flavour, are three great advantages ariſing from it; and it facilitates every other work. Mr. De la Quintinie has given ſome very judicious rules upon this head, but he has not ſufficiently digeſted them, and he is ſometimes prolix. I ought however to do him the juſtice to acknowledge, that the light he has thrown upon the ſubject, has been of great ſervice to me, and has enabled me to carry my obſervations ſtill farther, which may be uſeful to others hereafter. I ſhall now mention in order, all the important points that depend upon this operation.

The term, rubbing off the buds, demands no farther explanation, as it carries its own meaning with it; and though nothing can appear at firſt ſight more eaſy, yet the executing it with proper judgment and preciſion is a matter that requires a thorough knowledge and ſome experience.

The beſt time to perform this, is in the month of May, as they are by that time ſufficiently formed to enable you to make a proper choice, and tender enough not to require any other inſtrument than the thumb.

This rubbing off the buds is generally confounded with a ſecond operation, called pinching, and a third, called ſtopping; becauſe they are performed all at the ſame time. Every one knows, that in the ſpring, a Peach tree abounds with a great number of ſhoots, which require to be thinned, and the rubbing off the buds, is only clearing theſe ſhoots, which if not done ſooner, ought to be done at the firſt time of laying them in; but it makes an infinite difference if it is done ſooner.

As I before obſerved that the beautiful figure of the tree, and a reaſonable quantity of good fruit, are the two principal objects of pruning, all your operations ſhould be directed to theſe ends. You muſt therefore eaſe the tree of every thing that is either uſeleſs or hurtful. I call that uſeleſs, which though good, is badly placed, and that hurtful, which is bad in itſelf. Theſe are two evils, which muſt be corrected; and the ſhoots that were ſhortened the laſt winter, are more particularly ſubject to them. Or as the ſhoots are, according to my method, generally left ſeven or eight inches long, and ſometimes more; you will find in that extent eight or ten buds, which are ſo many ſhoots. Such a number cannot poſſibly receive equal nouriſhment, and will of courſe cauſe much confuſion; you muſt thin them therefore, and leave only two or three, in proportion to the room you have, chuſing one or two of the loweſt, oppoſite each other, together with that at the end, if there is any fruit upon it, and there is none lower.

If there is no fruit ſet but at the bottom, or if it is ſet all along the whole ſhoot, where the number of eyes may be eight or ten; in both caſes you muſt ſhorten it pretty near half, and keep only three or four peaches at as equal diſtance as poſſible, obſerving always to leave one good new ſhoot at the end. You ſhould at the ſame time pinch all the ſhoots, that grow to the fruit, to the thickneſs of a quarter of an inch, (which is called ſtopping;) and if there are any more ſhoots that have no fruit next them, break them quite off, always confining yourſelf to two or three.

When a ſhoot has got no fruit upon it, prune it down to the ſecond of the new ſhoots; that is, leave only the two loweſt, unleſs the too great vigour of the tree requires more wood to waſte and divide the ſap.

As to thoſe ſhoots which were pruned very ſhort in the winter, you ſhould leave but two new ones upon them, the higheſt and the loweſt on the oppoſite ſide, and rub off all the reſt that have no fruit upon them, or if there is, pinch them down; ſometimes however it will be ſufficient to leave only one new ſhoot, and that the loweſt.

If any ſtrong ſhoot comes out, either from thoſe which were pruned in the winter, or from the body of the tree, you muſt obſerve its ſtrength and conſider whether it is wanted. If it is likely to prove hurtful to the neighbouring ſhoots, or that it is uſeleſs, cut it quite out, but if it be uſeful, either to fill a vacant ſpace, or to prevent one, or to exhauſt the too abundant ſap, pinch it to four or five leaves, and as a new ſhoot will come out from every leaf, you will have four or five middling-ſized ones to chuſe out of at the firſt time of laying them in.

All weak ſhoots that come out of the old wood, muſt be cut out, unleſs any of them are wanted to fill a vacancy, or are likely to be of ſervice hereafter; but all the little cluſters before-mentioned muſt be preſerved from whatever part they come.

You muſt be very attentive to the foot of your tree, for ſhoots are often thrown out which may ſerve to replace thoſe that are decayed, and if any ſuch puſh out very ſtrong, they ſhould be pinched to five or ſix eyes.

All thoſe rank ſhoots, which are diſtinguiſhed by their green colour, ſize, and redneſs at the tips, muſt be carefully taken out from all parts, unleſs you want them to fill up a place, and you have no other reſource; in that caſe you muſt pinch them off, which ſhould be repeated in June.

It oftens happens, that two or three ſhoots come out together from one eye, eſpecially at the end of a ſhortened ſhoot; you ſhould leave but one of thoſe, and chuſe that which is beſt placed. Whenever you meet with twin peaches one bigger than the other, which is generally the caſe, you muſt with great care take off the leaſt without looſening the other; but if they are of equal ſize, either pull them off, or leave them, for neither of them will come to perfection.

Theſe are nearly all the directions to be followed in rubbing off the buds, and I ſhall now ſhew the utility of it. It will be eaſily imagined that this operation performed in proper time muſt greatly ſtrengthen both the fruit and ſhoots that remain, for as they receive much more nouriſhment than they could before, they muſt of courſe thrive better.

Moreover, thoſe ill-placed ones, that you have now removed, and which otherwiſe muſt have been cut out at the firſt time of laying in the ſhoots, would perhaps have grown ſo vigorous as to have injured the ſhoot that is well placed, which being now diſincumbered and left to itſelf, will receive more nouriſhment and become a good branch.

Another advantage is, that you take off the ſhoots cleaner than could be done with the knife; for if you wait till the time of laying them in, the confuſion cauſed by ſo much wood, prevents you from cutting cloſe enough, and the ſhoots become full of diſagreeable ſtumps, which take up a great deal of time to cut out in the winter; and if they are ſuffered to remain, they make a very bad appearance. Beſides the ſtumps that are left at the ſummer pruning, generally put out two or three bad ſhoots, which exhauſt the ſap to no purpoſe, cauſe great confuſion, and damage the fruit.

It will happen too that the force neceſſary to be uſed in cutting out all theſe ſuperfluous and ill-placed ſhoots, and the impoſſibility of ſeeing what you are about, will ſhake off a good deal of the fruit, which at this time would be regretted, ſince it has in great meaſure got over all hazards.

Upon the whole you may be certain of fruit, if you have not neglected to rub off the buds, but otherwiſe the conſequence will be, that the fruit being hidden, choaked up, and as it were buried behind ſuch a thicket of leaves and wood, becomes tender, as is evident from the colour, which is rather white than green, and when it is ſuddenly laid open to the air, joined to a ſcorching ſun, great part of it withers and drops off; for it is to be obſerved, that as the ſap is carried to the extremities of the ſhoots, and as the tips of them only enjoy the benefit of ſun and air, all thoſe that are buried behind the others, will ſhed their leaves, which dry up to a certain diſtance, and therefore cannot cover the fruit, or but very imperfectly. But this will never happen when the air has been admitted to the whole extent of the ſhoot, and when the fruit while young, has been inured to the injuries of the weather and ſun; they will grow hardy by this means, and when once they have attained the ſize of a nut, they ſeldom drop, unleſs there are more than the tree is able to nouriſh.

The fruit too has this further advantge, that the inſects, eſpecially ſnails, do not ſo readily faſten upon it when it is a little open, as they do when it is tied under the leaves, which make it tender.

Again, It is much eaſier to ſet at liberty ſuch fruit as is confined between the treillage and oſiers, or between the treillage and the wall. In the firſt inſtance, you untie the band, and in the other, you have only to bring it back to its place; but if you wait till the time of laying them in, the fruit will by that time have got half its growth, and be deformed paſt all remedy.

It will be alſo too late to replace the ſhoots that have run behind the treillage, which are ſometimes very valuable; as they will have grown too ſtrong and hard to be brought back without breaking, though it might have been done ſooner with great eaſe.

I ſhall here ſpeak of the blight, which term I ſhall explain, as it may not be underſtood by every body. This diſorder is very common in our climate, and is the effect of noxious winds, that curl up the leaves, which become thick, yellow, red, and ſcabby. This is very diſagreeable to the eye, as well as injurious to the fruit, for the blighted leaves exhauſt all the ſap at the expence of the fruit. When your trees are ſtruck with this blight, you muſt not only take off all the curled leaves, but alſo cut off, below the diſorder, all the infected ſhoots which form a rough and diſagreeable thicket. This enables the ſap to puſh out new ſhoots lower down, which will be equally good for the next year. Obſerve however, that if the tree is infected all over, which is ſometimes the caſe, and there remain no healthy leaves to cover the fruit, ſome of the blighted ones muſt be left for that purpoſe, till it has put out ſome new ones. If this is neglected, all theſe infected leaves waſte the ſap, and prevent it from producing others; they will ſoon dry up and fall off, and your fruit, which is yet tender, being uncovered, is ſcorched by the ſun, withers, and drops; ſo that there will not be the leaſt appearance of fruit remaining.

The ants and vine-fretters ſometimes cauſe the ſame diſorder, and the ſame remedy muſt be applied; but theſe inſects are generally more eager to deſtroy the eyes, and the ſap cannot make any farther progreſs. The remedy for this may be ſeen in the twelfth chapter.

If the gum has attacked a ſhoot, it muſt be cut off an inch below, by which you ſtop the communication, and prevent it killing the whole ſhoot. It will ſoon puſh out one or two more, and have no bad conſequences.

The laſt advantage that reſults from rubbing off the buds, is, that the time employed in it is ſufficiently compenſated when you come to lay them in, for you will then have very little to cut out, or any thing material to attend to; every ſhoot that was left, points out the place it is to occupy; it directs itſelf as it were, and there is nothing to do but to tie it. This forwards the work ſo much, as I have experienced more than once, that it does not take more time to tie three of theſe trees, than is required for one when the buds have not been rubbed off.

In the mean time, though this may have been done with the greateſt nicety, you muſt not forget to review them every eight or ten days, in order both to bring back the ſhoots which have ſince ſlipt behind the treillage, and to deſtroy inſects, eſpecially ſnails, which are always at work after rain, and in the dew of the morning. At the ſame time, you will ſee what damage the gum has done, and remedy it. This takes up ſome hours, but they will be well employed.

When you are maſter of your own time, it is better to divide this work into two; in the following manner. In the beginning of April I rub off all the ill-placed buds, that is, the foreright ones, and thoſe behind the ſhoots, and at the end of May, when the fruit is ſet, I finiſh the reſt. Every one will do in this reſpect as his time permits.

There is however ſome variation to be made from the rules I have here laid down, according to the different ages of the trees. Thoſe of the firſt year's planting I go over, for the firſt time, about the latter end of April. I rub off all the buds that have puſhed out before and behind the ſtem, and leave none but thoſe on the ſides; and when it happens, that one ſide has puſhed out more than the other, I pull off the buds from this, to throw the ſap to the other. At the end of May I look them over the ſecond time, and if I find one ſhoot much ſtronger than the others, I either cut or pinch it.

I practiſe nearly the ſame thing for the firſt three or four years, but with this difference, that if the tree is very vigorous, I do not unload it near ſo much as one that is weaker; for I only take out from the ſtrong ſhoots that were left at the firſt rubbing off, all the ill-placed ones, preſerving all that come out from the ſides, at leaſt as many as I have room to lay in.

As to the old trees, I not only take off all that are ill-placed, but even all thoſe that are of a certain degree of weakneſs, in order to ſtrengthen the reſt. I confine myſelf to a ſmall number of the beſt ſhoots, and leave but little fruit. Theſe ſhould always be done after the others, as they ſhoot later.

I ſhall not ſay any thing of trees that are in their prime, as all the directions neceſſary for them will be found in the beginning of this chapter.

CHAP. IX.

Of the Firſt Time of laying in the Shoots.

THIS operation on Peach trees ſhould be begun in June, either ſooner or later, as the ſeaſon is more or leſs forward, and conſiſts in laying in, and faſtening in a regular manner, the new ſhoots to the treillage.

When the rubbing off the buds has not been neglected, this is the moſt ſimple and eaſy of all the operations in pruning. You have ſcarce any thing to cut out, no choice of ſhoots to make, no fruit to thin, or very little; and in ſhort, nothing to do, but to faſten the ſhoots. The whole art of this conſiſts in laying them at proper diſtances from each other, in extending them well, and making them fill up their proper places, that the tree may be full throughout. Beſides this, you muſt obſerve to cover the fruit with leaves as much as poſſible, which contributes to increaſe both its flavour and ſize.

You muſt be careful never to croſs the ſhoots without an abſolute neceſſity; a vacancy being the greateſt defect in a Peach tree, the filling that up is the only excuſe for it, and the leaſt of two evils ſhould be choſen.

You ſhould preſerve one or two of the ſmall ſhoots that come out between the leaves of this year's branch, and chuſe the loweſt, becauſe it is often better to prune upon theſe ſmall ones the next year, than upon that which produces them; for, on account of its too great ſtrength, or for want of fruit-buds, it is often neceſſary to cut this out; and when the tree grows too high, theſe ſtronger ones ſhould be cut down to the ſmall ones, to ſtrengthen the reſt.

The ſmall green ruſh from the marſhes is the moſt proper for tying the ſhoots; that of Marſeilles, though it be ſoaked in warm water, is too hard, and bruiſes the young ſhoots. Beſides, as it is not ſo pliant as the other, it does not tie ſo faſt, the work cannot be done ſo quick; and moreover, it ſpoils the knives. Straw, or ſedge, which ſome make uſe of, has an unpleaſing appearance, and ties the ſhoots very ill.

Theſe are all the particulars I had to offer, relating to this operation, upon a ſuppoſition that the buds have been rubbed off. If they had not, I ſhould have every thing to ſay. In that caſe, it will now coſt you a great deal of time, pains, and precaution, to do all that might have been done a month ſooner with great eaſe. You muſt in ſome meaſure penetrate into this confuſion, and break through the obſcurity, to determine what is neceſſary to be taken out, as well with regard to the wood as the fruit. I cannot even think of ſuch an undertaking without trembling, and therefore refer the reader to the preceding chapter. He will judge of what ſhould be done by what has been omitted. He ſhould always be guided by the ſame principles; he will meet with the ſame cauſes, the ſame objects, the ſame inconveniences. Whoever finds himſelf in this ſtate of perplexity, muſt do as little miſchief as he can.

CHAP. X.

Of the Second Time of laying in the Shoots.

AS the ſap is continually in motion from the month of February to the month of September, it is neceſſary, a month or ſix weeks after the firſt laying in the ſhoots, to repeat that operation, which is now much eaſier.

If the buds have been rubbed off, there will have been very few new ſhoots made; becauſe thoſe that were taken out, having been nipped in their birth, the ſap has not been able to puſh out any more at the ſame places, and is all carried either into the ſhoots that were laid in, or into the fruit. If the buds have not been rubbed off, it is common to find falſe ſhoots put out from the bottom of thoſe that were cut at the firſt time of laying them in. You muſt therefore break them off with your thumb, if they are tender enough not to require the knife.

If new ſhoots are puſhed out, in any other part of the tree, that are uſeleſs or badly placed, (which they generally are) you muſt take them out; but obſerve, not to take out any with the thumb, but what will break off eaſily; for if the wood has begun to harden, you will damage the mother branch, and the gum which will iſſue from the wound will kill it. Cut them out therefore as cloſe as you can.

If any of thoſe which were laid in the firſt time near to a vigorous ſhoot that was ſhortened, is alſo itſelf become too luxuriant, by the abundance of ſap thrown to it, (and this often happens in vigorous trees,) you muſt take out ſuch ſhoot entirely, or at leaſt ſhorten it down to the loweſt of thoſe it has produced. You have now nothing more to do, than to faſten the ſhoots that have grown longer ſince the firſt operation, and to cut down thoſe rather below the top of the wall, that have run above it.

There are trees ſo luxuriant ſometimes as to require this work to be repeated a third time, in the month of September. If it is thought neceſſary, it ſhould be done, and in the manner I have deſcribed.

CHAP. XI.

Of uncovering the Fruit, and the proper time to gather it.

ALthough it has hitherto been neceſſary to keep the fruit covered with leaves, till the time of its ripening, that it might not be expoſed to the violent heat of the ſun; it now becomes neceſſary to lay it open, in order to perfect its flavour, and to give it that beautiful colour, which is its chief ornament. But as it would be dangerous to expoſe it too ſuddenly, it ſhould be accuſtomed to it by degrees, that is, at three ſeveral times.

You ſhould begin to uncover your fruit when it is juſt turning, or changing colour. A few leaves ſhould be taken off, either to the weſt or to the north, according to the aſpect of your wall. Three or four days after, a few more may be taken off from the oppoſite ſide, and in about the ſame time again, thoſe in front; ſo that at laſt they will be quite uncovered, and loſe nothing of the ſun. Soon after this, they change colour, ripen, and you gather them when they are turn'd yellow, on the ſide next the wall, where the ſun cannot penetrate.

You will ſee at a glance when they are in this ſtate. Thoſe that are not, ſhould be taken off without violence, by taking them full in the hand, and pulling them gently to you. If they are quite ripe, they will come off in the hand; but you muſt avoid ſqueezing them with the thumbs, to try if they are ripe, as is practiſed ſometimes; for this wounds and bruiſes them very much. This is the time to be obſerved, if you would eat them in perfection; but if they are gathered for ſale, or to be carried ſome diſtance, they ſhould be rather harder, when they do not come off the tree ſo eaſily.

One material point to be attended to, when the fruit is uncovered, in the manner I have ſpoken of, is, that the leaves muſt not be torn off, but pinched with the nail near the footſtalk; for the violence uſed in tearing them, ſpoils and mangles the eyes of the ſhoot, and prevents the fruit-buds from forming themſelves for the next year.

CHAP. XII.

Of the different Inſects that damage the Wood and Fruit of Peach Trees, and the remedy to be applied.

THere is a ſort of green caterpillar, which eats the flower-buds before they open. As ſoon as you perceive this, you muſt look for, and deſtroy them, for they will certainly be found behind ſome of the ſhoots.

The wood and field mice, the rats and houſe-mice, and the leſſer dormice, animals of nearly the ſame fur and ſhape, are the greateſt nuiſances to Peach trees. They ſometimes do great damage to a whole plantation, by beginning every peach, before you can gather one. If they would keep only to thoſe they begin, it would be more ſufferable; but they try them all on the ſide next the ſun, as faſt as they ripen, and they are conſequently all ſpoiled. There are two methods of deſtroying theſe animals. The firſt, by traps of different ſorts, with which the wall ſhould be furniſhed, at certain diſtances from each other, eſpecially next the trees, which begin to ripen their fruit, taking care to look them over every day, and now and then to change the baits. But it is beſt not to wait till the fruit ripens; for they are much leſs greedy of the baits when they have fruit to eat, than when they have none.

The ſecond method, which need not preclude the uſe of the firſt, is to ſtop up well all the holes in the walls, as well without-ſide, as within; for when they are driven out of their harbours, they do not increaſe, at leaſt not in the ſame place, but are forced to ſeek ſome other habitations, and if the breed is not totally deſtroyed, it is at leaſt very much thinned. You may alſo lay ſome arſenic, mixed up with flour or minced meat, along the coping of the wall, but great care ſhould be taken, that no accidents happen from it.

It would be happy could we but find as eaſy remedies againſt the ants. Theſe little inſects entirely ruin all the trees they attack with vigour, and it is not poſſible to guard againſt them. The number of them may eaſily be leſſened, of which there are many methods, but I believe it is impoſſible wholly to deſtroy them; and if it was true, as it is pretended, that they are to be driven away by means of ſome drug, to which they have a great antipathy, I am clear, from my own experience, that the evil would only change its object, for they will go further off, and fix upon ſome other tree. This I have ſeen happen ſometimes, though without being able to account for it. We muſt therefore purſue ſuch methods as are practicable, and be ſatisfied with thinning them as much as poſſible, in order to leſſen the evil. Of all the methods I ever experienced, the following ſucceeded beſt. I procure the foot of an ox freſh killed, and flay the ſkin half off, without ſtripping it entirely. One of theſe I lay at the foot of every tree that is infeſted with the ants, placing beſide it half a pail of water. The ſmell of this draws the ants from all parts, ſo that in a little time it will be quite covered with them. I then take it up gently, and drown them, by flinging it into the water. It ſhould be taken out again immediately, and replaced as before, and in a few hours the ſame effect will follow; ſo that this may be done five or ſix times in a day, and will deſtroy a great number of them. In a few days the foot may be changed, when the ſun has dried it up, and it has no longer any ſmell. But I muſt obſerve, this method does not anſwer, unleſs the weather is a little warm; for upon trying it in the ſpring, the ants would not faſten to it.

It is neceſſary to make ſome allowance for what I have ſaid, of the impoſſibility of guarding Peach trees from theſe wretched animals. This is not to be taken in its utmoſt extent with regard to any but dwarfs, for it is poſſible to defend the ſtandards and half ſtandards, and my method is as follows. You immediately unnail the tree that is attacked, and if the ſtem will bend a little, you ſhake it ſeveral times, till you ſee no more of theſe inſects remaining upon it, and bruſh them off the leaves with your hand. You muſt then have the patience to pull off all the leaves that are infected with their eggs, and with the vine-fretter, which is inſeparable from them. This being done, you keep the tree about a foot from the wall with a forked ſtick, which will hold it ſteady in any poſition; above this ſtick you make a little baſon with ſoft wax, all round the ſtem of the tree, and fill it with water, which muſt be repleniſhed as faſt as it evaporates: By this method, the ants, who cannot ſwim, retire at the ſight of the water, and the tree may be replaced. In doing this, you ſhould be careful to put behind the tree two or three laths, to keep the branches in their places, which the wind and the load of fruit will otherwiſe break down, obſerving to tie the ſhoots to the laths as ſecure as poſſible.

Another expedient is ſometimes uſed, inſtead of the baſon of ſoft wax, which is, to tie ſome cotton or tow, dipped in oil, round the ſtem of the tree; oil of ſpikenard is the beſt, but for want of that, olive oil will do, though neither of theſe are a certain defence againſt theſe inſects, yet it often drives them away. The tow muſt ſometimes be refreſhed with oil.

The ants are alſo very deſtructive to the orange trees; and in Italy, where the greateſt part of their walls is covered with them, this fruit being more agreeable to their climate than any other, they practiſe the following method, which I took notice of in the garden of a curious perſon at Naples. The trees were planted a good foot from the wall, each tree being upon a ſingle ſtem about a foot and a half high. Upon the ſame line with the trees, oak poſts, of about four inches ſquare, were fixed in the ground, at ten feet apart; theſe were made of the ſame height as the wall, in order to receive a treillage, in the faſhion of that country, which, though it differs from our's, is intended for the ſame uſe. The trees were planted between the poſts, and kept low, in the ſame manner as we train them upon our croſs or dwarf walls. Upon the ſtem of every tree, and upon every poſt, this cotton dipped in oil was tied, as I have before deſcribed. The good effect of this remedy appeared from the beauty of the trees; and the owner of them aſſured me, that the ants had never touched them ſince they were firſt planted, though I ſaw others ſome few yards diſtant, planted againſt the wall, that were infected with them.

Nothing would be more eaſy than to train up our Peach trees in the ſame manner; but in defending them from one evil, I am afraid they would be expoſed to ſome other, and perhaps a worſe. Our climate is very different from that of Italy; the cold winds that would draw in between the tree and the wall, might be very injurious to them: beſides, that the fruit being deprived of the reflection from the wall, might ripen later, and therefore have leſs flavour. Whoever finds his trees very much peſtered with theſe inſects, might try this method upon a few fathoms of wall; at all events, the hazard or expence cannot be great.

The bugs often attract the ants, and therefore you muſt take care in the winter, to ſcrape clean all the ſhoots, when they lay their eggs, with a wooden knife. This is abſolutely neceſſary to be attended to.

The ſlugs and ſnails likewiſe eat our Peaches, and eſpecially the Violet, of which they are very greedy; but they may be deſtroyed, if the trees are looked over very early in the morning dew, or after a gentle ſhower.

The birds too are curious enough to taſte them, particularly when any inſect has begun them. Theſe are eaſily driven away with ſcare-crows, and when they fail to have a proper effect, a boy may keep them off, by walking along the wall. If that does not anſwer, the following is a method I have lately ſeen practiſed by a curious perſon, though I have not tried it myſelf. This is, to ſtretch all over the tree, about ſix inches apart, lines of red worſted, which it is confidently ſaid, keeps them off, by ſome unaccountable antipathy they have to it. This method is alſo ſaid to preſerve grapes; it is eaſily tried, and will coſt little.

It is much more difficult to guard them from earwigs and waſps, than from other inſects. Theſe are two enemies that ſometimes do great injury to this fruit, eſpecially to the Little and Groſs Mignon, which is one of the firſt that ripens. There is no better method of defending them from the firſt, than keeping the wall well plaiſtered, that they may not find harbour; but if, notwithſtanding this, they are troubleſome, you muſt fix behind the branches ſome ſheeps horns or pigs hoofs, into which they retire, and you ſhake them out, and deſtroy them every morning. As to waſps, they may be deſtroyed with bottles half full of water, ſweetened with honey, in which they will drown themſelves; but this is a trifling relief, and there are many other expedients equally ineffectual. What has always appeared to me to be moſt uſeful is, to place here and there in full view upon the treillage ſome Peaches that are partly eaten, or ſome other fruit of a ſweet kind, either plums, figs, or pears; they will ſtick to thoſe that are within their ſight, and never attack the whole fruit. It will of courſe be underſtood, that as faſt as theſe are eaten, they muſt be ſupplied with others. A great many might be deſtroyed at ſeveral times in the heat of the day, if you have courage enough, by ſeizing them a handful at a time, when a great number of them are got together upon the half-eaten fruit, and ſqueezing them to death, for which you muſt be defended with an ordinary glove, if you would avoid being ſtung.

CHAP. XIII.

Of the Precautions to be taken during the Heats of the Summer.

IN good ſoils, more particularly where the bottoms are wet, if your borders have been kept clean, and there has been no extraordinary drought, there is nothing to fear, and very little to be guarded againſt; but in hot and ſandy ſoils, the drought often kills the trees, or at leaſt renders them very ſickly, and the fruit they bear has neither ſize nor flavour. I adviſe thoſe who are ſo unhappy as to be ſituated in theſe kinds of ſoils, to throw down three pails of water every fortnight at the foot of each tree, and to rake the ground over a few hours after; at the ſame time, a good armful of long litter may be thrown upon it, to keep in the moiſture. I alſo adviſe ſtraw to be wrapped round the ſtems of the trees, and tied with oſier; this will preſerve the trees, and the good effect of it will appear in the fruit. In the ſouthern countries the tree ſhould be covered with mats during the greater heat of the day, otherwiſe the ſun ſcorches the fruit, and ſoon kills the trees.

CHAP. XIV.

Of covering the Trees.

THE delicacy of our Peaches, or more properly ſpeaking, the great fear we have of loſing what is ſo very valuable, has obliged us to have recourſe to all poſſible means of defending them from the injuries of weather; but after having, like other people, tried every one, I affirm that I have found them all deficient. However, that which I ſhall mention is a good a good one, but is ſo expenſive, it will ſuit but very few.

There are ſome who, when the trees are in bloſſom, which is the critical time, cover them with *Peaſe-haulm*; but this is a very bad expedient, for it is generally put either too thin or too thick. If it is too thin, it neither defends them from the froſts, nor from the ſun, which does moſt damage after a froſt; if it is put thick, it may indeed keep them from the froſt or the ſun, but it is attended with a great many inconveniences. The dangerous time laſts about ſix weeks, during which your tree, ſmothered under this covering, but ſtill giving way to the force of nature, puts out ſhoots as well as bloſſoms, and the fruit ſets. But how does it ſhoot? Like endive in a trench; that is, the leaves and fruit are more white than green; and when you uncover them, at the end of April or beginning of May, half the young ſhoots, which are twiſted in between the Peaſe-haulm, will be torn off along with it; the fruit too being tender, and not capable in this country of bearing the leaſt cold air, or the leaſt degree of ſun, dies, and falls off. Thus end in general all the pains you have taken.

Others make uſe of a kind of covering, which is made two different ways; one with packthread, or gut; the other with the ſame wood as is made uſe of for the treillage.

The firſt are very bad, as I can ſay from my own experience. Firſt, they are hung too near the tree, and when ſhook by the wind, they rub off half the bloſſoms and buds, without reckoning thoſe that are deſtroyed every time they are taken off and put on again. Secondly, the fruit becomes too tender under theſe coverings, and has not air enough; ſo that after having been accuſtomed to this, when they are firſt expoſed to the leaſt air, (if the coverings are neglected to be put on) they die; and this requires a conſtant attendance. But even ſuppoſing this method would have the deſired effect, if it was put in execution with the greateſt nicety, who could depend upon the care of his gardener, ſo as to be ſure, that during the hazardous ſeaſon, he will not once forget to cover and uncover the trees at the proper time? This conſideration alone ought to undeceive every body; for it is very clear, that one hour too ſoon or too late will kill all the fruit.

The coverings made with lattices and wire, are of a better ſort, ſince they do not touch the tree, and the bloſſom has air underneath; but they have alſo their inconveniences. You muſt have them of the height of your wall, and they muſt extend from one end of it to the other; for if you only put one here and there, it will anſwer no end.

The trees will receive as much injury from the draught of wind along the ſides, as they would by being expoſed to the froſts; and to cover a long wall from one end to the other, requires a great number, which is indeed very expenſive. A covering of nine feet long by four broad, which is the common ſize, reckoning every thing, comes to near 20 ſols, and laſts ſcarcely more than two years; the damage it ſuſtains, by being carried to and fro every day, the injuries of weather, and the ſpoil made in it by the mice, whilſt it lays by, all help to deſtroy it. Beſides, it is a great deal of trouble for a gardener to put up and take down, twice in a day, or ſometimes oftener, ſuch a quantity of coverings, which are not eaſy to remove, when they are ſoaked with rain, or covered with ſnow. It cauſes too a great deal of wet and mud at the foot of the tree, and you can hardly make uſe of your borders to raiſe early peaſe, ſpring lettuces, or any other legumes. Moreover, they require the ſame attendance as the others, to put them up and take them down at the proper times. All things conſidered, it is an expenſive method, and certainly does more harm than good; ſo that I do not recommend this more than the other.

I think curtains of coarſe cloth, or glaſs frames, are more uſeful, and very different from the others; ſince little time is required to open and ſhut them, they are managed with leſs trouble, and without any of the inconveniences to which the coverings are ſubject; in fact, the fruit has air, it is not battered, and is ſheltered from all injuries of weather. If glaſs frames are uſed, the fruit ripens three weeks ſooner than common; but theſe methods are very expenſive. The curtains may be carried off in one night, if they are not watched; the glaſs frames are often very much broken by wind and hail, and it requires a great deal of labour and expence for a carpenter to put them up and take them down every year. They are not proper therefore for any but thoſe who are able to bear the expence, and who will ſpare nothing to gratify themſelves.

Somebody endeavoured to perſuade me ſome years ſince, that by laying litter at certain diſtances all along my walls, and ſetting fire to it early in the morning, during the froſt, the ſmoke that it made would prevent the cold from nipping the bloſſom, and the fruit when ſet, and that it would at the ſame time take off the violent heat of the ſun, which ſcorches after a froſt, and certainly preſerve my trees. I thought the advice was rather plauſible, and made trial of it; but I ſuffered for want of conſidering it; for we ſhould always proceed upon ſome principles. Now, as it is well known, that the froſt never takes hold when the wind blows, the danger is only when there is none, and therefore the ſmoke cannot have the effect intended, which is to ſpread itſelf like a curtain all over the trees; inſtead of this, it aſcends as in a chimney, and is of no uſe. This was exactly what happened with me.

From all I have ſaid, the reader will undoubtedly conclude, that I have not informed him of any means to defend his trees from the injuries of weather. I allow that I am not capable of doing this; but as my deſign is only to undeceive him with regard to the bad methods by which he may ſuffer, my obſervations may claim ſome merit. For want of a certain expedient, (for I know of none,) I ſhall mention one that I conſtantly make uſe of. The firſt idea of it was not mine, but I think I have in ſome particulars very much improved upon it.

Mr. Girardot, a muſketeer of long ſtanding in the ſervice, ſo well known for his beautiful plantations at Bagnolet, and by the immenſe profit he made of them, is the inventor of this method, ſince uſed by many of the inhabitants of that neighbourhood. He fixed pieces of wood, which projected about two feet all along the wall under the coping, at the diſtance of a toiſe apart. Upon theſe he layed planks when the hazardous time came on, pretending that the ſpring froſts came in a perpendicular direction, and that, by covering his fruit at the top, it was in no danger, either from the froſts or the cold rains, which are equally injurious to it. This he conſtantly practiſed, and others after him have proved the ſucceſs of it. The ſame way he has chalked out may be boldly followed, and this I have done, though with ſome difference. Inſtead of theſe pieces of wood, which remain fixed in the wall, and make a very diſagreeable appearance all the ſummer, I uſe little crutches of light wood, the tops of which are made ſloping, to drain the water from the coverings that are laid upon them; theſe are tied with oſiers to the top-piece of the treillage, ſix feet apart; and inſtead of planks, I made, in imitation of the people of Montreuil, ſmall mats, about two feet broad by twelve and half long, bound together by two laths. In the month of February I place my mats upon the crutches, and tie them with oſier. Here they remain till the month of May, when they are all taken down, and carried into my garden-houſe. This takes up but two whole days, and the expence is very little; theſe coverings are certainly good defences to the fruit, though not ſo as abſolutely to inſure it. This is all I can adviſe, and for the reſt we muſt truſt to Providence. The Peach however is not ſo very tender as it is thought. I have twice ſeen the buds of pears, plums, apricots, and cherries, killed with froſt, when the bloſſom of Peaches ſuffered but very little, which may be depended upon for truth.

This laſt expedient that I have juſt mentioned, cannot be uſed but where there is a treillage, another inducement to learn the ſtill greater advantages of it.

CHAP. XV.

Of the Diſtempers of Trees.

THE chief diſtemper that Peach trees are ſubject to, and which is without remedy, as it has no name at preſent, is known by all the ſhoots, the leaves, and even the fruit, turning black and clammy. This is a kind of leproſy, which is contagious, and communicates itſelf to all that ſurround it; and if care is not taken, as ſoon as the tree is attacked, to have it pulled up, and the wall waſhed with lime, which itſelf contracts the evil, and turns black, your whole plantation will die, one after another. I cannot account for the cauſe of this diſtemper, but the common opinion of its being the bug, does not appear to me probable; or if it is partly owing to that, there is ſome other co-operating cauſe. It may be cauſed by unwholeſome blaſts, which ſtrike more in one place than another, or a ſtream of corrupted air, the bad habit of the tree, or the violent gleams of heat after a fog; in ſhort, whatever be the cauſe, the evil is certain, and we muſt be contented to ſtop the progreſs of it, by rooting out the tree immediately.

The ſecond diſtemper that moſt affects our Peaches, is the gum; for which neither is there any remedy. If it only injures ſome few branches, and the reſt are worth preſerving, you muſt endeavour to keep in thoſe that are good, but if it extends to all parts of the tree, you muſt pull it up, and plant one of a different ſort in its place. The Red Magdalene and the Violet ſuffer moſt; and if you find you cannot raiſe them, they muſt be given up.

The miſchief done by ants is alſo one of the greateſt evils incident to Peach trees. I mentioned every thing I know upon this head in the ninth and twelfth chapter. I ſhall only add, that if they continue upon the ſame tree two or three years ſucceſſively, the ſhorteſt way is to pull it up; for they will never leave it till they have killed it; and a new ſcheme of deſtroying them may not always ſucceed, eſpecially if the tree is a different ſort.

If a tree grows ſickly, and you cannot account for it, lay the earth open, and examine the roots. They are ſometimes eaten by the May bugs, which is common to young trees; and in this caſe, you muſt ſeek them out wherever you find the roots eaten. Sometimes the red ants attack and canker them; the only remedy for which is, to deſtroy as many as you can. Scrape the roots well, and throw away the infected earth, replacing it with freſh. If the miſchief proceeds from ſome roots that are damaged and rotten, they muſt be cut off to the quick, and filled up at the ſame time with freſh earth. By this care the tree is reſtored; but before you make up the ground, try whether ſome pails of water will not revive it, if it happens to grow ſickly in the height of ſummer.

In the months of June and July honey-dews ſometimes fall, which greatly injure the trees as well as the fruit. There is no other remedy for this accident, which cannot be prevented, than to ſhorten the ſhoots, and they will puſh out others, from the loweſt eye, which are ſometimes healthy, but ſometimes inherit the diſeaſe; however there is no danger in making the experiment.

The laſt diſorder common to all trees is old-age. This is known by the yellowneſs of the leaves, by the weakneſs of the ſhoots, and by their throwing out the fruit very ſmall. If you could renew the tree, by means of ſome good ſhoots that it may have puſhed out from the bottom, you ſhould head it down to theſe young ſhoots, or you may ſoon reſtore it by thoſe that are come out of the ſides, if you do what I ſhall adviſe in the next chapter.

If it is cut down to the large branches, which is practiſed by ſome, it ſeldom puts out new wood. The ſap forces itſelf with difficulty through the bark, which is harder than that of any other tree. Manuring and changing the ſoil will anſwer no end; the tree has done its buſineſs.

CHAP. XVI.

Of the method of new planting an old Eſpalier.

I Recommend it ſtrongly to thoſe, who would make new plantations, to reſerve a few plants, for a ſupply upon occaſion. The gum, or ſome other unforeſeen accident, kills a tree ſometimes, when it is leaſt expected. Nothing is more diſagreeable, than to ſee a gap in a plantation, which muſt therefore be prevented, by planting in any expoſure, about a dozen trees of the ſame ſort of fruit, as you have planted againſt your treillage. Theſe ſhould be labelled with pieces of ſlate, tied to each tree, or to the treillage; and when any one fails, you take one of the ſame ſort, to ſupply the vacancy. If they are carefully taken up, they will ſtrike root perfectly well, though they be four, ſix, or even eight years old, which I have very often experienced. The caution to be uſed in this, is to make a little trench all round the tree you intend taking up, at about two feet and a half diſtance from the ſtem, and three feet deep, by twelve or fifteen inches wide. When the trench is made, you uncover the roots by degrees, and that they may not be injured, you uſe a pronged fork, ſuch as is uſed in the vineyards. You then gently take away the earth from the right and left, till the roots are looſened, and you find the tree comes up eaſily. If it hangs by any large root, you muſt cut it off as deep as you can. As ſoon as it is taken up, you carry it to the place where it is to be planted, and having tipped the roots, and pruned the ſhoots very ſhort, you ſet it to the height of the others, or rather ſix inches higher, becauſe the ground that has been juſt moved, will ſink ſo much in a few months after. The roots muſt all be well extended to the right and left, and whilſt one man throws in the looſe earth, another ſhould be in the hole to ſettle it to the roots with his hands, and take care that they are not entangled with each other. You then fill up the hole, and throw over it three pails of water, which ſettles and binds the earth to the roots. If you obſerve all theſe particulars, you may depend upon it, by the ſpring it will make as good a figure as the others, and you may even gather fruit from it, though it ſhould not be ſuffered to bear too much. Take care during the hot weather, in the following ſummer, to water it from time to time, and move the ground about it afterwards. You may alſo for better ſecurity, throw an armfull of long litter round the ſtem.

This tranſplanting ſhould be performed about the beginning of November, and it is generally thought right, to cut out a good deal of the wood.

If you have not had the precaution to make this little reſerve of trees, and are obliged to replace your old trees with young ones from a nurſery garden, you ſhould purſue the method of planting I have laid down in the third chapter.

All that I have here ſaid, ſhould be underſtood to relate to young trees only, for old ones muſt be treated entirely in a different manner. You muſt make the moſt of theſe old trees as long as they laſt, and have others ready to ſucceed them, when you ſee they approach near their end. For this purpoſe, young trees ſhould be planted in the ſpaces between the old ones, obſerving when they ſhoot, to lop off all the branches of the old trees that may ſhade them, and prevent them from ſpreading. When they begin in four or five years to make a ſhew, you pull up the old ones, and you find a new wall of trees. It is by this means the trees at Montreuil ſucceed each other without intermiſſion, and are formed perfectly well. However it is not to be expected that they ſhould ſucceed as well every where; for the ſoil of this village ſeems to have been created on purpoſe for this fruit. But the experiment ſhould be made, and the rather that if they ſhould not ſucceed in this method, you would have very little reaſon to flatter yourſelf that after having pulled up your old trees, and trenched up your ground, a new plantation would ſucceed better.

C H A P. XVII.

Of Tillage.

EVery one knows that weeds exhauſt the ground, and impoveriſh it. They cannot therefore be too carefully deſtroyed; and that is the firſt reaſon for digging round all ſorts of trees. Secondly, they are diſagreeable to the ſight. Thirdly, they harbour inſects which are communicated to the trees and fruit. Fourthly, they dry up the ground. Fifthly, they prevent the gentle ſhowers, from penetrating eaſily and uſefully: In ſhort, all ground that is not moved, cracks in dry weather; and the heat of the ſun, penetrating through theſe clefts to the roots of the trees, injures them greatly.

For all theſe reaſons wall-trees cannot be too much cultivated. They ſhould be well dug in the autumn, and again in April; and in the ſummer, the ground about them ſhould be moved with an hoe or rake, as often as is neceſſary. This ſhould be done in fine weather, that the weeds may ſoon wither and die. The digging at this time of year is not ſo proper, as it diſturbs the roots and gives them too much air.

CHAP. XVIII.

Of the propriety of laying Dung to Peach Trees.

OPinions are much divided upon this head, and every one has reaſons, which appear to him ſufficient to confirm his opinion. Mr. De la Quintinie, expreſsly forbids all ſort of dung; and after endeavouring to prove by ſpecious arguments, and ſubtile compariſons, that it can be of no ſervice to the trees, he gives you reaſon to fear that it may injure them. I have the higheſt reſpect for this great judge; but whether he was liable to prejudice, as every one is, or whether the ſoil of Verſailles, where he exerciſed his genius, has the peculiar quality of not requiring any foreign aſſiſtance, yet his opinion cannot prevail againſt the experience of a thouſand people, who always make uſe of dung, and entirely approve of it. The ſentiments of a few particular perſons are not to be relied on, ſince opinions are ſo various, and there are a great many, who pronounce raſhly on the contrary ſide, and that rather from their prejudices, than from any ſettled principle; but I maintain that the practice of a whole country, the inhabitants of which, from father to ſon, for a long time paſt, have made the management of wall-trees their ſole employment and trade, is ſufficient to determine it, and eſtabliſh a rule for us. The general cuſtom of the inhabitants of Montreuil, Bagnolet, and other neighbouring places, is to lay hot dung to their trees every three years, that is, to thoſe of a certain age, which begin to be exhauſted with bearing; for the young ones which ſhoot vigorouſly, do not require it. The dung might damage them, and prevent their ſetting for fruit. Thoſe that have had no dung ſhew an apparent difference; and they themſelves own, that their fruit loſes a great deal of its quality and ſize. It would be abſurd therefore to conteſt a fact, that has been proved by ſo long experience; and a ſuppoſition that their ground may want aſſiſtance, which other land does not, would be ſtill more idle. They have in their diſtrict, which is very extenſive, ſome ſoils very ſtrong, others light, and others gravelly, ſome ſheltered by hills all round, others ſituated in a plain. The dung has the ſame effect upon all; and it muſt be ſuppoſed that they are well apprized of the neceſſity of it, for if they had the leaſt doubt about it, they would not be at the expence, which is a principal object.

Certain perſons who are prejudiced in their opinions upon this head, but who are obliged to allow the good effect of dung, ſince it is ſo apparent, retract (as I have ſometimes done,) their opinions in part, and inſiſt, that though dung increaſes the vigour of the trees, and ſize of the fruit, yet it takes from the flavour, as it does from that of wine; but this reaſoning is erroneous, as I am clear from experience. I have found on the contrary, that the fruit which had been dunged, had more juice; (I don't ſay more flavour) and more delicacy than that which had not, and it was becauſe it was better nouriſhed.

As to the ſort of dung, you ſhould procure, if you can, that of horſes, mules, or aſſes, both becauſe it warms the ground at the ſame time as it imparts its ſalts, and becauſe it makes it lighter and eaſier to work. On the contrary, cows dung is much the beſt for hot and dry ſoils; it enriches them, and keeps them freſh and cool. It ſhould be turned in, in the month of November; for, in the following months, the froſts often ſet in, and it is then too late. In the ſpring following, when the trees are dug the ſecond time, the dung which the ſpade brings up to the top of the ground, ſhould be buried again at the bottom of the trench.

I ſhould mention here, that if your borders are only three or four feet broad, as they too often are, your trees will receive very little benefit from the dung; for it does not act upon the great roots, but upon the fibres, at their extremities. It ſhould therefore be laid at ſome diſtance from the body of the trees, in proportion to their ſize. All that is laid cloſe to the body is entirely loſt, and may ſometimes injure the tree, either by cankering the roots, if it lays upon them, or by attracting different inſects, which will kill them. It appears by this, how abſurd it is, to lay open the ground about the trees, to dung them at the foot; for beſides the inconveniences I have mentioned, the dung ſo laid forms a ſort of bed, which growing hard, prevents the rain from penetrating. It would therefore be much better, not to dung them at all.

Thoſe whoſe borders are ſo narrow, ought not to heſitate about enlarging them to ſix feet at leaſt, if they intend their trees ſhall reap any benefit, either from the dung or cultivation. They are ſometimes with-held from this, upon account of a row of grapes, which ſerves as an edging for the border, and which they are unwilling to deſtroy. But in this caſe they need only leave one long ſhoot to each vine, and lay it the next year two or three feet farther into the walk. In the autumn it is ſeparated from the vine, and the old one pulled up, by which no profit is loſt, a new plantation is formed, and the defect I ſpeak of remedied.

It now remains that I ſhould make the advantage of dung appear, from the experience I have had of it theſe twenty years. I practiſe it, not only for my wall-trees, but for all other ſorts, except ſome few, and thoſe that are grafted upon free ſtocks, which ſhoot ſtrong enough without it. This method has always ſucceeded ſo well with me, that I do not conceive how the utility of it can be diſputed. The fruit I gather in the years I dung, is increaſed one third in ſize, and that is ſufficient proof. Moreover, they ſhould be dunged more or leſs often, according to the quality of the ſoil, and the burden of fruit the trees have produced. It is ſufficient for ſome plantations once in about ſix years, while others require it every three, four, or five years.

CHAP. XIX.

Of the Carriage of Trees into diſtant Countries.

THE life of a Peach tree, like all other plants, depends upon the moiſture that is diſperſed through all parts of it, and ſo long as the moiſture remains, the tree is alive. The point then is to preſerve it, by preventing the air and ſun from drying it; for when a tree is pulled up, it has no longer the ſame reſources as a rooted one, which is continually ſucking up the juices of the earth, in order to repair the loſſes that the outward parts ſuſtain from the ſun and air. It muſt now ſubſiſt by itſelf, and you muſt take care that it loſes nothing; the following precautions for this are therefore to be obſerved.

As ſoon as the trees are taken up, ſhorten the roots a little as well as the head, form them into bundles of twenty, or at moſt twenty-five trees each, if they are dwarfs; or of twelve, if they are ſtandards; lay the roots carefully upon each other, ſpread ſtraw between the bodies, that the bark may not be rubbed off, and tie the whole with oſier; you then put freſh moſs between the roots, crowding in as much as you can, till they are all entirely covered. Over that you ſhould put ſome long ſtraw, which is bound faſt all round with cords, and the bodies of the trees muſt be wrapped up in a good thickneſs of ſtraw, tied faſt with the ſame ſtrings. The laſt thing is, to put round the whole body of roots a piece of packing-cloth, well tied all round. Being properly packed up in this manner, you may ſend them into any country you pleaſe, and be aſſured, that if they are upon the road from the end of October till March, they will not die. I have ſent ſome to Muſcovy, and the fartheſt part of Italy, which have ſucceeded perfectly well. There is one farther precaution to be obſerved, when they travel a great way by land, and there is a great deal of ſun and drying wind, which happens ſometimes in the months of October and November; this is, to order the carrier to throw ſome pots of water upon the body of the roots from time to time; and on the contrary, if they are upon their journey during the hard froſts, to cover them with a good deal of ſtraw, and even with rugs, if he can. When they are to go by ſea, theſe things need not be attended to, becauſe they will be then ſheltered both from the drying winds and froſts.

There is another and better method of packing dwarfs, which is, to cut them off a foot from the bud, and to place them very tight in a hatter's baſket, obſerving before-hand to line the baſket well with ſtraw all round, and at the ſame time to cover the roots with moſs, placing them one upon the other ; and for greater certainty, you may cover the baſket all over with ſtraw, that you may be better ſatiſfied as to the fate of them.

When the trees are ſafely arrived at their deſtined place, I ſhould recommend the roots to be ſoaked in water two days before they are planted.

CHAP. XX.

Of the Manner of raiſing and budding Peach Trees.

I Have already obſerved, that there is a great deal of trouble, and little advantage, in raiſing young trees in the neighbourhood of Paris, where a great number are at all times to be found, and at a cheap rate. But as every body is not within reach of Paris, and the trees being often packed in a careleſs manner, when they are to be ſent to any conſiderable diſtance, notwithſtanding all the directions that can be given, and as it coſts at leaſt a great deal of ſuſpence and uncertainty, it is a good way to raiſe them yourſelf, that you may have them when they are wanted, and that you may be more certain of the ſorts. I therefore adviſe all thoſe who live at a diſtance from nurſery-gardens, to make a ſmall one of their own, proportioned to their neceſſities.

You ſhould begin by preparing your ground, which ſhould be in a good ſoil, and trenched up about two feet deep: It would be proper, if you can, to let it lay a year before you convert it to a nurſery, and give it ſome hoeings during the ſummer.

The Peach is budded upon three ſorts of ſtocks, as I have mentioned in the third chapter; upon its own ſtock, upon the almond, and the plum. The firſt is now ſeldom uſed, (though the bodies of theſe trees are much finer than thoſe of the others, and the tree more vigorous,) becauſe it is too ſubject to the gum. The two laſt ſhould be choſen; and every one will prefer that which beſt ſuits his own ſoil.

The almond is the beſt for light and gravelly ſoils, and the plum for all others; but I ſhall not repeat the reaſons I have before given.

The following is the method of raiſing the almond. You ſhould carry into a vault, or good cellar, a ſmall caſk or tub, proportioned to the number of plants you would raiſe. In this veſſel you put two inches of freſh and rich ſand, and upon that a laying of almonds, at an inch diſtant from each other, with the points downwards; upon theſe a ſecond laying of ſand of two inches, and upon that another of almonds, till your veſſel is full. This is done in November, and in this ſituation they continue all the winter. In the ſpring following you take the almonds out of the ſand, and put them in the ground that you have prepared, at eighteen or twenty inches apart, and about four deep, which having begun to ſhoot in the ſand, very ſoon come up out of the ground.

This however is not the general practice; many do not put their almonds in the ground till the month of January, not deſirous of their being ſo forward, and inſtead of covering them up, they leave them in the open air in tubs, expoſed to the ſun, with the caution only of covering them in the hard froſts. Others put them in later, and ſteep them two days in warm water before they plant them, in order to diſpoſe them to ſhoot. Others again ſow them in their gardens along a border, in a good aſpect, and cover them in the froſts; but they run great hazard of the mice and crows deſtroying numbers of them, if they are at all troubled with theſe animals. Every one follows his own opinion in what regards his own buſineſs, but great allowances ſhould be made for the ſoil and climate. The eſſential point is the certainty of the almonds growing, and that they are not too far advanced when they are to be put out in the month of March; for notwithſtanding all the care poſſible, a great many of the young ſprouts, which are very tender, will be broken, in taking them out of the ground, when they have ſhot too long; and though they are not broken, they are very ſubject to die after being planted out.

In ſhort, when they are to be put out, you ſhould plant them by a line, ſo as to leave two feet and half, or three feet, between the rows, for the convenience of going between them, and the eaſe of hoeing the ground in the ſummer, for all weeds ſhould be carefully deſtroyed.

I ſaid in the firſt edition of this work, that the tender almond of Provence would ſucceed better than any other, having really obſerved, that the Peach bud took upon it perfectly well, and made very fine ſhoots; but, ſince that, I have remarked, that this ſort is more ſubject to the gum, and therefore I retract my former opinion.

At the end of Auguſt following, the ſhoots are ſtrong enough to receive the bud, and you bud them at two inches from the ground, obſerving that the eyes of the branch, from which the bud is taken, are double, and accompanied with two or three good leaves; the ſingle eyes that have only one leaf are never good ſubjects to bud from. The method of budding is ſo well known to every one, that I ſhall ſay no more upon that head, but only recommend, that the band is a little looſened the next month, if it is found to bind too tight upon the bud. I ſay, the band; but I ought to explain, that it is better to uſe twiſted tow; which does not cut the bud, like cord or ſtring, becauſe it gives way, as the bud ſwells.

The following ſpring, when the buds begin to open, the binding muſt be quite looſened, though not taken off, and the ſtock cut down ſlanting, exactly above the bud; the eye ſoon after puſhes, and throws out its ſhoots.

The next October the Peach tree will be quite formed, and it may be taken up and planted in the place you deſign; for it ſhould not remain longer in the nurſery, that is, not a ſecond year, though it might remain all the winter till March.

What I have ſaid, relates only to dwarfs. When ſtandards or half ſtandards are to be raiſed, the almonds ſhould be ſuffered to ſhoot during three or four years, and their ſtems trained up ſtrait, by tying them to ſtakes for that purpoſe. Care ſhould be taken at the ſame time, from year to year, to cut off the lower branches; but they ſhould not at firſt be cut cloſe to the ſtem. The firſt time you ſhould cut them at ſome inches diſtance, and the year after quite cloſe. The reaſon of this is, that ſtumps which are left may draw the ſap, and make the root grow faſter; for the more it throws out roots, the more nouriſhment is drawn to the body, and the ſtronger it grows. But the ſap muſt not be diverted too much, leſt the leading ſhoot ſhould not thrive, and grow away, which is the object in view. You ſhould therefore keep it of a moderate ſtrength, that when it is arrived to a proper ſize, you may bud it at the ſame time and in the ſame manner as the dwarfs, four, five, or ſix feet from the ground, if the ſtem will permit it, and you judge it convenient.

Thoſe that ſeem moſt inclined to ſhoot ſtrait, are generally choſen for ſtandards and half ſtandards, and the crooked ones for dwarfs.

As to the plum ſtock, they generally get ſuckers or cuttings from ſome old ſtump of the damaſine, which is very common every where; ſo that there is no difficulty in procuring them; and the cuttings of the top ſhoots of a tree that bears well, are as good as the ſuckers from * old ſtools that have been undermined and dug round for that purpoſe. They are pulled up in November, and immediately planted in the nurſery, in rows, like the almonds, and at the ſame diſtances. They ſhould be cut down directly to five or ſix inches, and remain two years, that is, till Auguſt in the year following, and then budded in the ſame manner as the almond, and planted out at the end of the year.

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* It is a cuſtom with many gardeners to dig round an old plum tree, and partly to undermine it, in order to force out fruit, and the cutting the roots aſunder makes it throw out ſuckers.

If ſtandards and half ſtandards are to be raiſed, the ſame directions muſt be obſerved as for the almond.

I adviſe you to chuſe the ſuckers of a plum called the St. Julien, to bud the Violet and Chevreuſe Peaches upon. This is the only plum which ſuits theſe two ſorts, the reaſon of which I ſhall not examine; it is ſufficient that experience has convinced all thoſe whoſe trade it is to raiſe trees about Paris, of the fact.

From what I have ſaid upon this ſubject, it will eaſily be inferred, that all thoſe who would raiſe Peach trees every year, ſhould have a ſmall ſpot of ground prepared one year under another, and obſerve, that the land in which they have been once raiſed, muſt not be applied to the ſame purpoſe again in leſs than three or four years, though it will be very good for grain or legumes.

To ſave thoſe the trouble of calculating, who are deſirous of knowing what quantity of ground any number of plants requires, fixing the diſtance of the rows at three feet, and that of the plants at eighteen inches; the perch of land of eighteen ſtatute feet ſquare contains ſeventy-two plants; theſe multiplied by 100, which makes an acre, gives 7200 plants *per* acre. In ſome provinces the perch is twenty and twenty-two feet, but this is of no conſequence; it is enough to know how many a perch of eighteen feet will contain, and it is eaſy afterwards to know how to increaſe the number of plants in proportion to the increaſe of the perch.

CHAP. XXI.

Of the Method of making a new Plantation.

IN the courſe of this little work, I have mentioned every thing that may be moſt uſeful for the plantation of Peach trees; but in this I have only conformed to the uſual cuſtoms. Since my firſt edition of this, the event has proved to me the good effect of a method which I had conceived a great while ſince, but of which I had not had ſufficient trial to offer it to the public. My experience now gives me a right earneſtly to adviſe it, and I dare affirm, that thoſe who are willing to purſue it, will reap all the ſatisfaction from their plantation that the nature of the thing can admit of; but before I come to the point, it will be proper to make ſome obſervations relative to this practice, that the utility of it may be better underſtood.

The making a plantation muſt always be attended with ſome hazard, notwithſtanding all the care that may be taken. The doubt as to the ſorts, the uncertainty of the ſtocks they have been budded upon, the quality of the buds that are made uſe of, and in ſhort, the fear of the trees taking root, are four particular objects of attention.

The certainty of the ſorts explains itſelf, and conſiſts in having them true, and ſuch as you require. It is in that you muſt depend upon the word of the nurſery-man, and the order he has preſerved in his garden, which may have been confuſed by various means. Few ſorts can be known by the wood and leaf, as I before obſerved, and therefore nothing certain can be expected from the niceſt precaution.

The uncertainty of the ſtocks upon which they are budded, is a ſecond point, the importance of which is known to few people, though it is nevertheleſs a capital object.

With regard to the almond, I ſhall obſerve, that many nurſery-men make no ſcruple of budding upon the bitter almond, becauſe it ſhoots ſtronger from the bud than the ſweet ones, and therefore anſwers better for ſale, though to the buyer it makes a conſiderable difference; for this tree bears but very indifferently, and the ſap is ſpent in producing wood; what fruit it does bear retains the bitterneſs, and is very ſmall. This is an irreparable evil, which nothing can remedy.

Other nurſery-men procure the ſmalleſt almond they can, and as this fruit is bought by meaſure, the leſs it is, the more there are in the * meaſure, and of courſe the leſs the ſeed

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* *Boiſſeau*—Near a peck and half Engliſh.

coſts them. But the conſequence is, that the ſhoots they make are much weaker than thoſe of an almond well grown, and the tree raiſed from it feels the weakneſs as long as it lives. It often happens too, that when the crops of almonds fail about Paris, the nurſery-men have recourſe to thoſe of Provence; but I have experienced, that the Peach trees budded upon them throw out much more gum than the others, as I obſerved in the laſt chapter; and this no one can diſcover when the trees are taken out of the nurſeries. Thus much with regard to almonds.

The ſame inconveniences attend the plum ſtock. There are a great many ſorts of plums that produce ſuckers equally fit for receiving the Peach bud, but the quality of the fruit they produce is very different. You ſhould be acquainted with thoſe that are beſt adapted to each ſort of Peach, though the nurſery-men often bud indifferently upon all ſorts of ſuckers, and ſometimes without knowing them themſelves; for they buy them wherever they can find them. From hence it ſometimes happens, that the trees do not bear, or that the fruit is bad; and this defect is often attributed to the ſoil, which ariſes from the kind of ſtock it is budded upon. This is a rock againſt which it is almoſt impoſſible to avoid ſplitting; for there is no mark by which you can know them when they are taken up. There are beſides other things to be mentioned concerning the quality and age of the ſuckers, which I ſhall ſpeak of ſoon.

The choice of branches from which the buds are to be taken, is another point of great conſequence in raiſing good trees; and this is the third inconvenience I have to ſpeak to, in which you may be equally deceived. The nurſery-men, who have nothing more in view than to make their trees appear as beautiful as poſſible for ſale, chuſe the largeſt ſhoots they can of the trees from whence they are taken, becauſe the buds are ſtronger, take eaſier, and grow more vigorous; but theſe large ſhoots are generally rank ones, the buds of which undoubtedly throw out fine ſhoots. This however is their only merit; for the trees they form ſpend themſelves in wood, and produce fruit very late and in ſmall quantities, for they always inherit the defects of the original ſhoots. Beſides, theſe nurſery-men do not take pains to procure the true ſorts, though there is a great difference in the quality of two fruits even of the ſame ſort: For inſtance, the Groſs Mignon, if it is the true ſort, is known by being almoſt round, by having an infinite number of little red ſpots on the ſide next the ſun, and the oppoſite ſide being of a yellowiſh white. On the contrary, the falſe Mignon, which is nevertheleſs the moſt common, is more long than round; it has no little ſpots, and is entirely green on the ſide next the wall. This difference in the outſide would be of no conſequence, if the quality of it was as good as the other; but it is ſo far otherwiſe, that it is nothing near ſo fine, ſo melting, nor ſo high-flavoured; yet they are both generally called Mignons, though it is impoſſible to diſtinguiſh them in the nurſery, nor can the nurſery-man be depended upon, for having procured the former inſtead of the latter. He moſt commonly takes the ſhoots from his own trees as they come, or as he finds them elſewhere, and does not think himſelf obliged to attend particularly to theſe niceties. This accounts for the difference in the quality of fruit, which you find better or worſe in your neighbour's garden than in your own, without perceiving the reaſon of it; and the caſe is much the ſame with regard to all the other ſorts of fruit, by which it may be judged, how little thoſe that are bought can be relied upon.

In ſhort, no one can promiſe himſelf that his trees will be adapted to the ſoil he plants them in, when he ſeldom knows whether that in which they were raiſed is nearly of the ſame kind or not. This is abſolutely neceſſary for their ſucceeding well, though it is a point very few ever attend to. Every one however muſt be ſenſible, that in tranſplanting a tree from a ſtrong ſoil to a light one, or from a light one to a ſtrong one, ſuch a change often cauſes them to be ſickly, and ſometimes to die, in ſpite of all the precautions in planting. Beſides, no one can tell whether the body is not diſtempered, which cannot be diſcovered by the eye, or whether the root may not have ſuffered ſome change ſince it was taken out of the nurſery. It often happens, that the ends of the great ſhoots, which are obliged to be ſhortened, become cancerous; and it is very common in all plantations, to find a great part of them fail, which can only proceed from ſuch unknown cauſes and unforeſeen accidents, ſince none are planted but what appear fair to the eye.

It muſt appear from all theſe conſiderations how hazardous it is to plant trees already formed, and I think every one will be ready to prevent theſe inconveniences, by following the advice which I ſhall give, which is, to bud the ſorts he chuſes himſelf; and the method of doing it is as follows:—You begin by ſetting out the plan for your plantation as I have explained it in the fourth chapter, and according to the quality of the ſoil, you fix upon the almond or plum ſtock. You mark out at the ſame time the diſtances of your trees, in proportion to the height of the walls, of which I have ſaid all that is neceſſary in the fifth chapter. Suppoſe then that you determine upon the almond, you muſt plant in the month of November three almonds in the places you have marked, at eight or nine inches diſtant from each other, and at ſix inches from the wall. You bury them only four inches in the ground, with the points downwards, and cloſe the earth to them with your foot; they muſt be covered during the hard froſts with a little ſhort litter, and uncovered as ſoon as the hard weather is over. In the following ſpring the kernel will ſprout, and they muſt be managed as I directed in the preceding chapter. At the end of Auguſt, or the middle of September, when the ſap is not in motion, you will bud them at two inches above the ground, in the manner before mentioned. The ſpring following the bud will ſhoot, and you muſt obſerve to pinch it at the fourth or fifth leaf, ſo as to leave it ſeven or eight inches long, the reaſon of which I ſhall ſoon explain; but before that is done, (*viz.* when the buds begin to puſh,) you muſt cut off the ſtock ſlanting, cloſe to the bud, covering the wound with a little ſoft wax; or for want of that, with a little tempered clay.

If your ſoil requires the plum ſtock, you will plant at the ſame time of year above mentioned, three plum ſuckers, of a proper ſort, at the ſame diſtances as the almonds. Theſe you cut down in March to two inches above ground, turning the wound next the wall; the ſap will riſe ſoon after, and if it throws out more than one ſhoot, you will chuſe the beſt, and break off all the reſt. This will ſtrengthen it, and in Auguſt or September you bud it, (provided it is ſtrong enough; if not, you defer it till the next year,) and in the ſucceeding ſpring, that is when the hard froſts are over, you cut off the ſtocks cloſe to the bud, as before mentioned, and looſen the bandage; the bud will ſoon puſh out, and you pinch it to the ſame length and in the ſame manner as I directed for the almonds.

In caſe you ſhould not bud it the firſt year, you muſt obſerve in March to cut down the young ſhoot to the thickneſs of about half a crown, that you may have a new ſhoot to bud upon in Auguſt; for the bud always takes better upon the firſt year's wood than upon the old, though they bud indifferently upon both.

I have adviſed the planting three almonds or three plum ſuckers, which I do only that you may be ſure of having one good one at leaſt to bud upon; for many accidents might happen to them, though but one ſhould remain. This is a neceſſary precaution, becauſe either the mice and large birds, ſuch as magpies and crows, which are very fond of almonds, always deſtroy ſome; or all the buds may not take: but as two-thirds are allowed for loſs, you may be very eaſy as to the ſucceſs. If the ground you plant them in is overrun with mice, it will be proper not to plant the almonds till March, after they have ſhot in the ſand, as I obſerved in the laſt chapter.

At the ſame time as you pinch the young ſhoots, you muſt reduce the ſtocks to one only, if they have all grown, and pull up all the reſt, for they will injure each other if they remain longer together; but in pulling them up,

you

you muſt take care not to diſturb that which is left.

When the ſtock that remains has put out three or four good ſhoots, which will be produced by the pinching, you muſt be careful in laying them in, and dividing them, according to the directions given.

I have hitherto ſpoken only of thoſe ſtocks that are to make dwarf trees; but when your walls require ſtandards or half ſtandards, it will cauſe you ſome anxiety; for you cannot bud theſe till the ſecond or third year, and I know how diſagreeable the ſuſpence of waiting two or three years is, to thoſe who wiſh to enjoy their fruit; but there is no avoiding it. In this caſe the ſtocks muſt be managed differently, and trained in ſuch a manner, that they may be budded at the height of four, five, or ſix feet from the ground. To this end, as ſoon as the ſtocks, whether almonds or plums, have begun to throw out ſhoots, you muſt reduce them all to one, and that the ſtrongeſt and beſt placed, which ſhould be ſupported by a ſtake, to keep it quite upright. It will be underſtood by this, that it is not to be headed down the next year, as I directed for the dwarfs. You let it run up then as high as it will for two or three years, till you think the ſtem is large enough to bud upon, which ſhould be a good inch in the place where it is budded: when it has attained this ſize, you bud it in the ſame manner, and obſerve all the

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ſame directions, as I gave for the dwarfs, only with this difference, that you leave two of the three ſtocks you planted, ſuppoſing they all took well, and take out the middle one, to give the other two more room; for as they ſtand longer in the ground than the dwarfs, the roots will interfere with each other. It will therefore be ſufficient if two of them are left; and ſome art muſt be uſed in taking up the ſecond after they are budded, that the remaining one may not be damaged. In order to be more ſure of the buds taking, you may put two buds in each ſtock four inches apart, oppoſite to each other, that if one fails, the other may ſucceed; and when you find them ready to ſhoot, you may cut down the ſtock to the beſt of the two, and the loweſt ſhould always be preferred.

I muſt now explain the care that is requiſite, as well for the ſtocks that are to be budded, as for the buds themſelves.

If you plant almonds, you ſhould chuſe the fineſt that are to be had, the whiteſt, and of the ſweet kind, which ſhould be of the ſame year's growth. You will alſo take care, when the ſhoot begins to ſhew itſelf above ground, (which is the critical time,) to preſerve it in the beſt manner you can from deſtructive animals, particularly the mice, which ſcratch and break up the earth all round to find the almond. You may deſtroy a good many of them with bell-glaſſes, placed in the ground at the foot of the wall half filled with water, in which they will drown themſelves as they run to and fro. For want of theſe glaſſes earthen pots may be uſed, or pieces of tile placed on each ſide the ſhoot, which remain till it is grown to a certain ſtrength, and prevent their injuring it.

If you plant ſuckers of the plum, you muſt take the ſame year's ſhoot, of a proper ſtrength, that is, about the ſize of your little finger, with good roots and the wood clear, and plant them about eight inches deep.

With regard to the buds, they ſhould be taken from ſound and vigorous trees, in full bearing, which are free from gum and canker, and of which you have ſeen the fruit. Beſides, every one who is a lover of the fruit, ſhould cut off the branch himſelf; for a gardener, who is entruſted to do it, might make many miſtakes, for want of ſufficient judgment, and there are very few who have any ſenſe of their maſter's intereſt; ſo that they would cut them off by gueſs, to ſave ſome trouble, or a few ſteps. Nothing is eaſier in the fruit ſeaſon, than to take a walk in the gardens of Montreuil, or ſome neighbouring ones, and to mark the trees whoſe fruit pleaſes you, by putting labels to them; you return again when it is time to bud your ſtocks, and obſerve, in chuſing the branches, that they are of a middling ſtrength, and furniſhed with good double buds; the largeſt are generally rank, which muſt be avoided, as I have before obſerved, and the weak ones have not eyes proper for budding. If you are not within diſtance of performing this yourſelf, and that you are under an abſolute neceſſity of leaving it to ſomebody elſe, take all the precaution your prudence will ſuggeſt to you, that the branches may be well choſen, and the ſorts marked with certainty. To this end you might ſend ſome one with your gardener, for a proverbial reaſon, *viz.* that four eyes are better than two. Thoſe who live at a diſtance in the provinces, and have nothing in their neighbourhood that would anſwer their wiſhes, muſt recommend it to the perſon whom they intruſt with their orders, to range the branches they ſend properly in boxes, diſtinguiſhed in bundles, and numbered, and to ſtick the ends of them in little cucumbers to preſerve them freſh: With this precaution they may remain in ſuch a ſituation for a month, without ſpoiling. Another circumſtance of the ſame kind muſt be attended to, when you bud, which is, to ſet the branches in a veſſel that has two inches of water in it, during the operation, that the ſun and air may not dry them.

I ſay nothing particular of the operation itſelf, now known in all countries; but I muſt remark, that there is a nicety in doing it well, which is not obſerved by all thoſe who pretend to it; ſo that you muſt procure as intelligent a workman as poſſible; theſe are to be found about Paris; but in the more diſtant countries, every one muſt get ſuch an one as he can.

It remains that I ſpeak of the ſuckers; that is, of the ſorts of plums proper for budding Peach trees. We have but three ſorts that require a particular ſtock, the two Violets, Early and Late, and the Chevreuſe. This laſt is found by repeated experience to take very well upon the St. Julien; of which there are two ſorts, the Common and the Joré; the firſt may do, for want of the latter; but this is much the moſt certain, and ſhould always be preferred. All the other ſorts of Peaches require the damaſine, either the great or ſmall, which are well known, though the former is the beſt. They are diſtinguiſhed from each other thus; the wood of the great damaſine is of a grey colour, a little mealy, and the heart of the ſhoot whitiſh; the little damaſine is all over of a deep brown, and the heart of the ſhoot reddiſh. Theſe ſorts are ſometimes raiſed from the ſtones, by which you are perfectly ſure; but in general, ſlips taken from the foot of an old tree that bears well, or ſuckers from ſome old ſtool that has been dug round, are eſteemed equally good, provided they have good roots, and have no knots of old wood taken up with them. The ſhoots of the year ſhould be choſen, if poſſible, though the two years wood is good. Thoſe that have not any of their own, or in the neighbourhood, may be ſupplied at La

Vallée, where they are generally ſold from All Saints to March. This ſhould be well underſtood, and is all the direction in my power to give.

It will no doubt be thought, that it requires no more care and trouble to lay out a wall of trees in the manner I have mentioned, than to plant thoſe already budded. I grant this; but let any one reflect at the ſame time, how many and various the hazards are in planting in this laſt manner, and how mortifying it would be, to have trained up a tree for ſome years, and when it is juſt arrived at perfection, to find yourſelf deceived, that is, to find the fruit quite different from what you expected, either in flavour or fruitfulneſs. There are however too many who experience this mortification, which is a very cruel one, and whoſe example may teach others to avoid it. Now the method that I adviſe removes all inconveniences, prevents any that might be feared, and there will be nothing difficult in the practice. I add further, that if you have none but dwarfs, you will enjoy the fruit full as ſoon as by planting budded trees; for it is notorious, that this tree, by being tranſplanted, beſides the particular hazards it runs, loſes the firſt year in taking new root, which is not the caſe with that budded in the place where it is to remain; for the ſame year that the bud puſhes, the tree begins to form its head, by means of the young ſhoots being pinched; and it is much more eaſy to train it properly, becauſe there is a moral certainty that the ſecond ſhoots puſhed out from the firſt will be of an equal ſize, by which it is plain the ſap is equally divided: Beſides, it is certain, that a ſtock that remains in the place where it was firſt raiſed, always ſucceeds better throughout all the ſtages of its life, than one that has been tranſplanted. The check this laſt meets with, and the change of ſoil, muſt neceſſarily have ſuch an effect upon it, as not only to reſtore its growth, but alter its whole ſyſtem. The fact is, that the ſtem being ſuddenly deprived of the nouriſhment that keeps it alive, falls into a kind of lethargy, and remains in that ſtate, till the root has formed ſome new ſhoots, to give it a freſh ſupply of nouriſhment; and though it does not die, yet it is certain that the external parts of it ſuffer ſuch an alteration by the ſun and air, that they never recover, ſo as to return to their original ſtate. From whence it follows, that it never becomes ſo vigorous as before, and that, in the courſe of nature, it cannot laſt ſo long. I go ſtill further, and affirm, that whoever will make trial of the different effects of each, may perceive, that the fruit produced by trees planted in the firſt method will afterwards loſe ſomething of its flavour. My opinion is founded upon the acknowledgment even of ſeveral nurſery-men themſelves, who have often aſſured me, that the fruit they ſometimes gathered by chance from ſtandard trees that were at firſt deſigned to be tranſplanted, was much ſuperior in flavour to all they had in their gardens; and I once taſted it myſelf, and could not help being of the ſame opinion. But I return to ſpeak of the ſtrength and duration of the trees; and to confirm my opinion, I ſhall make ſome obſervations upon that head. It has been very often obſerved, that a ſtone remaining where it is firſt planted, throws out its ſtem and head much faſter, and more regularly too, than one that is tranſplanted. It is well known, that an oak removed never makes a fine tree, and that it ſhould be produced from the acorn. It is obſerved alſo, that cherries, and the wild cherry, which grow from ſtones, ſhoot away in a very different manner from thoſe planted out in fields. I could reaſon from trees to plants in a garden, and remark an infinite number that thrive much better where they were firſt ſowed, than when they are planted out; (ſuch for inſtances as lettuces, endive, onions, all kinds of artichokes, legumes, and all ſorts of roots.) This is too evident to be diſputed; but it may be ſaid, that the conſtitutions of all plants, no more than of all trees, are alike, which I grant; but I ſay, that the general order of vegetation is always the ſame, and that nature is much better pleaſed with her free and uninterrupted productions, than when ſhe is conſtrained, and put out of her courſe. I ſhall give ſome proofs of the fact I have here advanced.

A particular acquaintance of mine, ſome years ſince, ordered a bad piece of wood, of ten or twelve acres, to be deſtroyed, where finding amongſt the ſmall wood, of which it was full, a great many plants of wild pears and apples newly ſhot from the kernels, he ordered them all to be preſerved that were fit for grafting, and in the ſpring following grafted them, ſome by ſlit-grafting, and others by rind-grafting, according to their ſize. The grafts took perfectly well, and in three years he gathered moſt excellent fruit; but I ſhould ſay at the ſame time, that in deſtroying the trees he had them grubbed up as deep as poſſible, which gave the whole ground a kind of trenching, that was of great advantage to the young grafted trees; ſo that in ten years they formed heads as large as a tranſplanted tree does in twenty-five; and this plantation, made by chance, became an orchard of great profit, which I have often looked at with great aſtoniſhment.

I have one more obſervation to make, relating to the method of making plantations in the neighbourhood of Paris, which produce the cyder. Skilful people come here annually, to take up all the wild ſtocks they can find in the nurſeries of a proper ſize; theſe they carry home, and ſlit-graft them at the end of two years, when they have taken good root. I have often met them in the nurſeries, and upon talking with them, they all agreed in aſſuring me, that their fruits, grafted upon ſtocks as they grow in their proper places, ſucceeded much better in all reſpects, than ready grafted trees. I am quite of this opinion, without reaſoning any farther upon the cauſes; and I hope this little digreſſion is ſufficient to convince every one, that my opinion at leaſt is not founded upon trifling conjectures, and to make them ſtill more ſenſible of the utility of the method I adviſe.

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